

# MOTOR AGE

## STRENUOUS MUD PLUG OVER COAST COURSE



SOMETIMES THE GOING WAS DECIDEDLY SLOW AND HARD

LOS ANGELES, CAL., March 11—Motor touring is not always one sweet poem. There are times when shovel, pick and tackle are more valuable than gasoline and goggles. The date set for the proposed 500-mile race from Los Angeles to San Francisco was March 14, although today it was announced it had been postponed to April 14. So Bert Dingley, who is to drive the Pope-Hartford car, had to start last Monday morning to get over the long road twice as he had planned before the race itself begun. Rain was not figured upon, and unfortunately rain falls on the just as well as the unjust, so Dingley, who drove over the French roads in the Bennett cup race at 80 miles an hour, had to be satisfied with a much slower gait. At a quarter of 6 o'clock last Monday morning Dingley pulled out from the White garage in the green Pope-Hartford with which he won over all the touring cars in the Pasadena hill climb. Like his companions, Charles Fuller Gates, Eddie Cowan and George M. Adair, he was almost hidden by rain coat and rubber blanket. "Wild Bill" Reuss and another reckless driver sailed out ahead in Reuss' Pope-Hartford to show the way as far as Newhall, but alas for "Wild Bill," a tire blew out at 17 miles and he sadly

bid good by to the four pathfinders after begging one of their extra inner tubes and agreeing to ship a half dozen of them to Fresno in return.

It is no fun driving against a cold rain on a wet road, especially as the rain gets worse and worse. Fortunately the San Fernando road is a good one or the pathfinders would have been discouraged when they saw the first Tujunga wash. The rain had not yet set that channel aflow, but the middle channel made up for this neglect with a hundred yards of boiling, rolling, roily waters, yet not deep enough to stop Dingley and his Pope-Hartford, although half an hour later when Reuss tried this ford, his magneto was put out of commission and he had to give up the ferry business right there. In Fremont pass, where there usually is but one little stream to cross, the motorists found six swollen fords on each side, making some fourteen fords in the 32 miles into Newhall, while in the

next 2 miles to Saugus two wide streams had to be crossed. Up in the Soledad canyon the Santa Clara river had just come to life again with a channel some 50 yards wide but not yet deep enough to be serious. Adair, Gates and Cowan, as well as Dingley, were beginning by this time to wonder what another day would do to the landscape if the steady rain kept on. San Francisquito canyon was already full of water with its seventy-two fords and the upper Soledad had been closed for days so the only way to reach Elizabeth lake, the first checking point, was through the side canyon, where it was reported that water never interfered. Thus the Pope-Hartford reached Acton, where the good roads to Palmdale begin. It was now raining fiercely and the motorists stopped for an early lunch, meanwhile finding shelter for the car in a shed. At Newhall, where the first stop had been made, the car had been backed under a store awning while the four adventurers got rid of some of the water that had been too much for their big and heavy rain coats to shed.

There was no stop at Palmdale, for the rain was still coming down in sheets so the car was sent on at good speed for the expected shelter at Elizabeth lake registering station. Fortunately the motorists had



ONE OF THE FORTY-ONE FORDS IN DAY'S RUN



ONE TIME WHEN HORSES WERE USEFUL

a chance to exercise their muscles with the shovel and pick at regular intervals when the road turned to a sea of mud or the banks of a ford were too steep for the car to climb or else the cold rain would have chilled them too much to continue the ride. So these spells of getting stuck were not discouraging—in fact, were anticipated or else the special crowbars, shovel and the combined pick and maul with 200 feet of rope for tackle blocks and towing lines would not have been carried. Once in a while the rain would slow up and occasionally it turned to sleet or hail, while at 11 o'clock, for the space of 5 minutes, the sun came out. Over in the Leonas valley more fords were found and the width and depth of them made things look serious. Dingley had great confidence in his Pope-Hartford and when the water looked deep he had Adair place the rubber lap robe over the radiator and hold it there till through the ford.

There was still expectation of getting through when within 4 miles of Elizabeth lake. Then the car sunk so deep in the bottomless road that the weight was on the car instead of the wheels and though the wheels buzzed there was no traction. Here the crew worked for 4 hours and did not get out of the adobe until a pair of horses and four mules had been secured, besides timber to build a sort of railroad out of the bog. Here it was decided to return if possible to Los Angeles and let the rain claim the decision.

About a quarter of a mile farther on the ground was firm enough to hold the car and chains were applied to the wheels. Then with the car lightened of its load a run was made for the summit of the little ridge following along the brow of the hill away from the road and gotten by the bog and finally into the road again. Tackle and tools and passengers were loaded again and before 8 o'clock the car and party were under shelter back in Palmdale, but still 80 miles from Los Angeles and home by the only possible route. It was found that the railroad was out of commission on account of washouts and landslides and that the food supply at

Palmdale had run very low. The second morning, with dry clothing and the sun shining, the route-finders headed toward home. And yet before getting away from the little desert town the car was bogged again. A few miles farther it was necessary to jump at top speed a narrow water channel, and the car shot into the air over 2 feet as each pair of wheels struck. The rest of the day until mid-afternoon it was a succession of fords, bogs and washouts, but nothing very serious until the car fairly stood on its head, where the jump was too long for the Pope-Hartford. This time it was necessary to dam the torrent so as to get to the front of the car to dig it out. Bridge building was also necessary, and the whole job took 4 hours. Meanwhile it was raining again as hard as ever and the streams were getting much deeper.

The day before there had been forty-one fords, all serious, besides a host of small, unimportant streams to cross. This day fords had not been counted—they were so numerous—and only the deepest and widest had caused any worry. The sturdy car took them all with ease, even when it was necessary to run in the water channel for a hundred yards at a time. After this last digging out it was dark, and when the next serious complication loomed up, with no road for a mile or more ahead, it was



USING THE TACKLE



CUTTING DOWN A BANK

thought wise to put the car on high ground and go on afoot to find a roof to sleep under, as it was some 45 or more miles to Los Angeles and in an almost unsettled mountain country where no help could be obtained in hours and a team might not pass in a month or more.

Along toward midnight the four pathfinders found a cabin where it seemed that early the day before the single occupant had deserted to get food supplies. The roof was whole and there was a stove, a small cot, some fuel and some bedding, while outside the rain still came down steadily. Wet clothes were dried by the bee-keeper's stove and of the limited larder a supper was made. The bee-keeper had left three small potatoes, two eggs, four slices of bacon, half a small loaf of bread and some vile cereal coffee, also some crumbs and sugar and salt and some red hot pepper. Water was altogether too plentiful. The grub soon was divided among the four hungry men who had not eaten since the 8 o'clock breakfast in Palmdale. Three slept on the floor and one on the cot, and early the next morning, after eating the two eggs and drinking some of the cereal coffee, the grip and suitcases, gun and cameras, were taken up and the hike begun again. On the long night walk there had been fifteen fords to cross, some quite deep and wide, and the road had often disappeared for half a mile at a time under the yellow waters. About 9 o'clock an inhabited house was reached and a splendid meal obtained, the good housewife cooking about a peck of creamy biscuits and serving other delicacies not expected out there on the edge of the desert. The ranchman also consented to hitch up his horses and brave the Santa Clara river ford and take the motorists to the nearest town.

This was Newhall, an oil town, where a team was secured to carry the party over the Fremont pass into San Fernando valley, and if necessary, on to Los Angeles by an open route. As there had been 5 inches of rainfall in a day and a half—more than has fallen in a whole year in this part of the country for some years—there was



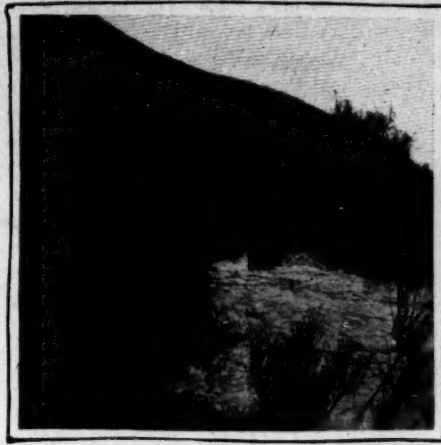
devastation everywhere, washouts so big and wide that only by seeing them would they seem possible. It was impossible to travel until the road had been rebuilt at these points. In some places a 20-foot bluff represented the road's end, and it was still raining and the water everywhere in evidence.

A motor car was ordered to meet the party on the other side of the last wash-out on the San Fernando road, and below San Fernando the hike was begun again. Finally 19 miles out from the city the rescuing car was found, and late on that third day the pathfinders arrived back in Los Angeles with a wealth of experience, water-soaked clothes and an armorplate of mud.

The Oldsmobile car entered in the 500-mile race got out on the road days ahead of the Pope-Hartford and was nearly to San Francisco before the big storm broke. Ralph Owen, of Cleveland, who is to drive the Oldsmobile in the race, was in charge, and with him were Harry Hahn, also of Cleveland, and Will A. Peck, of the Oldsmobile factory, now stationed at Los Angeles.

The Oldsmobile party was delayed by mud and water, and once, when stuck in the mud, had to walk 15 miles to find mules to pull the car out of the bottomless adobe mud. That took 7 hours. It certainly was a new experience for Owen—worse even than on his trip from New York to Florida, he declared, when he overcame all kinds of obstacles to blaze the way to Ormond.

This has been an unusually wet winter on the coast, and some attribute it to the inland sea on the desert, known as the Salton sea, which has changed the climate of the arid region. If more rain comes in future winters it will mean millions to the owners of land in the desert country, although the dirt roads will have to be replaced with stone or gravel and properly drained. On account of the weather conditions both sides have agreed to postpone the Los Angeles to San Francisco race for one month to April 14. The purse is \$6,000, half out on by each party, winner take



GORGE IN PLACE OF A ROAD

all, including advertising glory afterwards, the contract agreement being as follows:

"This agreement made and entered into this 12th day of February, 1907; by and between E. P. Brinegar of the city and county of San Francisco, state of California, and H. D. Ryus of the city and county of Los Angeles, state of California, to-wit:

"For and in consideration of the sum of \$6,000, same being for \$3,000 a side, the two parties agree as follows:

"First—Both parties agree that Fernando Nelson, of the city and county of San Francisco, be appointed official stakeholder. Attached to this agreement are checks of above named parties to this agreement, for \$1,000 each, guaranteeing the race, same to be forfeited in case of failure by either party to this agreement to fulfill the articles of said agreement to the satisfaction of the other party to the agreement.

"Second—Each party agrees to give the stakeholder a check for an additional \$2,000 on or before March 5, making \$3,000 a side.

"Third—Both parties agree to start this race on Thursday, March 14, cars to start at Fourth and Broadway, Los Angeles, and finish at Twelfth and Broadway, Oakland; cars to start 30 minutes apart, flipping coin at 4 o'clock a. m., on day of start; first car to start at 4:30 a. m. and

the second car to start at 5 o'clock a. m.

"Fourth—Both parties agree that the race is to be run by what is known as the valley route, taking in the following towns, viz.: San Fernando, Elizabeth Lake, Bakersfield, Fresno, Merced, Tracy, thence to San Francisco, via Livermore.

"Fifth—Both parties agree that both cars must carry four passengers at all times. Passengers and drivers, however, may be changed at any point en route.

"Sixth—Both parties agree that W. F. Hunt, representing E. P. Brinegar, and L. T. Shettler, representing H. D. Ryus, are authorized to postpone this race if, in their opinion, the roads or the weather conditions are such that it would be impracticable to run the race.

"Seventh—Both parties agree that the Pope-Hartford and Oldsmobile used in this race shall be absolutely stock cars, as shown by the 1907 catalogues issued by the Pope Mfg. Co. and the Olds Motor Works, respectively. The only exception to this rule will be that either party may provide any lamp equipment they see fit, and either party has the privilege of using shock absorbers, bumpers and straps.

"Eighth—Both parties agree that in case either or both parties are arrested by officers en route, that this race shall be postponed until some later date to be agreed upon by Messrs. Hunt and Shettler.

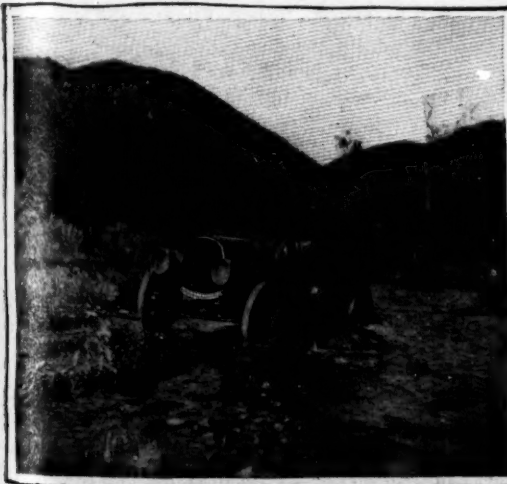
"Ninth—Both parties agree that in case neither car reaches the finish at Twelfth and Broadway, Oakland, within 40 hours from the time of starting at Fourth street and Broadway, Los Angeles, that the race shall be postponed to some later date to be agreed upon by Messrs. Hunt and Shettler.

"Tenth—Both parties agree that the defeated party will not mention in any way in his advertisements, for a period of 3 months from the date of the race, the fact of his having lost said race, or offer any excuse whatsoever for publication.

"In witness whereof, the parties to this agreement have hereunto set their hands and seals, this day and year, first above written.

"L. T. Shettler, for H. D. Ryus.

"W. F. Hunt, for E. P. Brinegar."



WATER NO HANDICAP



ONE OF THE EFFECTS OF THE HEAVY STORMS

## OHIO GETS THE START

### Tentative Glidden Route Beginning at Cleveland Decided on by New York Conference

New York, March 19—A tentative route likely to prove final and rules pronounced satisfactory to all parties concerned resulted from the conference held in this city yesterday by a joint committee made up of Windsor T. White, George W. Bennett and Benjamin Briscoe, on the part of the N. A. A. M., and Chairman F. B. Hower, Dai H. Lewis and Philip S. Flinn, representing the A. A. A. touring board.

In outline the route determined upon has its start in Cleveland, embraces Chicago, Pittsburg and Philadelphia and ends in New York. The contemplated intermediate points were not announced and, say the committeemen, will depend on the hotel accommodations and rates that can be obtained. The route chosen embraces for the most part country not hitherto covered by previous tours and at the same time includes populous sections offering rich fields for advertising and also takes in large cities well able to furnish accommodations to the tourists. From the A. A. A. standpoint the course runs through states desirable to be enrolled in the ranks of the organization.

A tour of some 1,600 miles is in contemplation to be covered in 9 days of actually running and embrace a fortnight's outing altogether. There is in view a stop over Sunday at Chicago, and for a day at two or three other cities en route.

It will be seen that the average day's run will be a mile or two over 150 miles, and it is said that some of the runs scheduled will even exceed 170 miles. This will make pretty strenuous running for 9 almost consecutive days. In fact one critic high up in motoring councils is of the opinion that the strenuousness of the schedule will keep out many of those having in mind participating in the run as a mere pleasure tour, if it does not keep out some weak-kneed makers as well.

The rules have yet to be formulated and Chairman Hower says they will not be promulgated for a week yet. It is no secret, however, that the N. A. A. M. suggestion that the club team contest idea govern and that all individual competition so far as the evolution of a single winner be eliminated has been accepted. Whether this contest will be on the basis of a successful finish at night on schedule time or on the basis of points founded on arrival at two or more daily controls on schedule time has not been announced. In fact, the official announcement of the action of the conference was confined to a mere statement of the tentative outlined route chosen; the fact that an early tour was favored, and that the length of the run would be 2 weeks, Chairman Hower is

known to favor a date even as early as June and no time later than the first half of July is likely to be selected.

Now that the conference between the two organizations has been held and the sentiment of the trade conveyed to the A. A. A. people Chairman Hower will go back to Buffalo and call together his touring board to vote upon the proposition as tentatively adopted by the two committees in their joint session here last night. That the route as outlined will prove acceptable to the touring committee is the opinion of those who have been in touch with both sides of the proposition.

### EASTERN SHOW SITUATION

New York, March 19—The Motor Age correspondent feels himself justified in stating with confidence that though the negotiations for the shifting of the date of the business show have not been concluded the A. L. A. M. will surely hold its annual exhibition in Madison Square garden early in November. The Madison Square Garden Co. generally finds some way to arrange its allotment of dates to satisfy its own convenience and it is no secret that the company is always desirous of meeting the desires of its motor show lessees. The shifting of the date of the licensed show forward to the beginning of November does not seem to at all ruffle the promoters of the Grand Central palace function. While Secretary Butler, of the A. C. A., did not care to discuss the change in date of the rival exhibition Alfred Reeves, general manager of the A. M. C. M. A., said frankly: "We have all along favored early shows and the licensed people have had to come around to them or there might have been some breakaways. We are now in the position that no change in date by the licensed people can embarrass us seriously. If the Chicago show be held in November it might decide us to put back our show into November. It is not impossible that we might be well satisfied to follow the Madison Square garden show. There will, however, be no meeting of our board of management for a fortnight hence, so I cannot say now what action we will take under the new conditions."

### FAST TRIP BY KELSEY

New York, March 18—By way of a wind-up to the recent New-York-to-Boston snow-bucking time trials and endurance runs R. G. Kelsey, hero of last November's 7-day run to Chicago, made last Friday the run of 245 miles to the Hub in 14 hours 30 minutes gross and 12 hours 45 minutes net time. He left Central Bridge with two companions in a 40-45-horsepower Matheson car at 6 a. m., reached Bridgeport, 58 miles, at 8:45; Hartford at 11:45; Worcester at 5:45 and arrived at Mechanics' pavilion at 8:30 p. m. A brief stop was made at Springfield for lunch by the Matheson party.

## ONE MORE ON CIRCUIT

### Providence Show Has Brilliant Opening—Governor Higgins and Staff in Attendance

Providence, March 18—The annual motor car show in this city opened tonight and it proved to be a brilliant success. It was attended by Governor Higgins and his staff, Mayor McCarthy and all the city officials. A special train yesterday brought to the show many of the exhibits from Boston and by quick work they were placed in Infantry hall before daylight. In all there are about fifty exhibits. The show is to run a week. The White people have a fine space in which they show two runabouts, red and yellow, also a limousine and a touring car, four in all. Stevens-Duryea cars are shown in three models—a six-cylinder and two four-cylinder touring cars. The Dragon company has two cars, a runabout and touring car, also its chassis. The Rambler is here with four models—two runabouts and two touring cars of both two and four-cylinder makes. The Ford shows two runabouts and one of the six-cylinder touring cars, and in the next space is the Wayne with two touring cars and next them the two Nationals. Jackson cars are shown in a runabout and two touring cars and there is one Logan in the space. Three Buicks are in space 10—two touring cars and a runabout. Two Johnson steamers also have a lodgement in the hall. There are three Stoddard-Daytons and in the next section are shown one model each of the Queen, Elmore, Corbin and Cameron. Two Berkshire cars have space 12 and the Reo cars are shown in two models near by. Two Grout machines are also there and Acme and Pungs-Finch cars have the next space, there being one of each. Two of the St. Louis cars also occupy a prominent place and Stanley steamers are shown in a couple of models. There is a good line of accessories comprising all the well-known tires. There is a number of motor cycles. The Atlantic company has a fine exhibition of motor boats. Taken all together for a minor show it is an admirable one.

The show is far from being a local exhibition. From Boston came a lot of motorists who are interested in the affair now in progress through having sub-agencies here. This in itself was sufficient to bring the leading dealers of the Hub and they now are in attendance. Their presence adds to the business-like aspect of the show. Many of those from Boston came here under their own power, as it were, disdaining to use the railroad, and relying upon their motor cars to cover the distance between the Hub and this city. When the out-of-town people got here they were surprised to find that the promoters had everything in readiness for the opening. The building had been secured in time to allow all



the exhibits to be placed before the doors were open, so that at the appointed hour everything was ready. The hall was a blaze of light and the display included many of the leading makes of the country, thus giving the residents of Providence and the people near here an opportunity to study the latest designs in motor cars, tires, accessories and appliances.

#### PARADE BEFORE SHOW

St. Louis, Mo., March 18—The St. Louis show, which will be held in the Jai Ali building, DeBaliviere and DeGiverville avenues, during the week of April 1, will be opened by a magnificent decorative and floral parade given under the auspices of the Automobile Club of St. Louis. The parade will start at 11 a. m. and will pass through the principal streets of the city, ending at the exposition building. Prizes have been offered for the three best decorated machines driven by owners, and for the best decorated machines driven by chauffeurs. Only the St. Louis manufacturers and those represented by agents here will exhibit at the show. All of the space in the big building has been sold. The show will open at 8 p. m., April 1, but on each succeeding day of the week the doors will be open from 10 a. m. until 11 p. m. The cars will be exhibited on the main floor of the building. Motor boats, motor cycles, auto-buggies, etc., will be exhibited in the annex. There is 20,000 square feet of space on the main floor. The accessories will be exhibited on the balcony. The Automobile Club of St. Louis has engaged reception rooms adjoining the main floor of the exposition hall. The hall will be decorated in cream effect, with a touch of the national colors. This will be the first show ever held in St. Louis. J. B. Strauss, president of the St. Louis Automobile Exposition Co., has obtained the coöperation not only of all the agents and manufacturers in St. Louis, but a majority of the owners of machines. It is expected there will be fully 250 cars in the parade.

#### MANY IN TOLEDO SHOW

Toledo, O., March 18—The first motor show ever held in this city will begin next Thursday and last 3 days. There will be from twelve to fourteen exhibitors in the show with about 100 vehicles representing about fifteen manufacturers. The lower floor of the large hall will be used for the showing of the vehicles and the balconies will be taken up by the dealers in accessories. At both matinee and night performances Van Doren's band will be one of the features. It is probable the list of entries may be greatly increased between this time and the time of holding the show, as there are several dealers not yet in line who probably will get in before the show opens. There also is a great number of accessory dealers who have not definitely decided as yet whether or not they will enter the exhibition.

## TALKS ON MOTOR ROAD

### A. R. Pardington Tells Pittsburg Meeting Fresh Facts Concerning Long Island Parkway

New York, March 18—A. R. Pardington, manager of the Long Island motor parkway, is back from Pittsburg, where he addressed a meeting of the American Road Makers' Association, taking for his theme the parkway itself and telling the meeting a few things not generally known about the enterprise. After informing the meeting that 44 of the 60 miles of right of way desired had been secured without having to spend a cent for the real estate he came out flat-footed and said the parkway was not designed simply for racing purposes but rather a touring route, although there will be several straightaway stretches reserved for speed bursts.

"The right of way itself will approximate 60 miles long and 100 feet wide," he said. "Fifty feet through the center will be improved as a motor highway. The 25 feet on either side will be graded and sodded, and beautified by the planting of shrubs and vines. One hundred and twenty-five miles of wire fencing will be used to enclose this parkway. Every intersecting highway will be crossed either above or below grade by a bridge or culvert of reinforced concrete, reserving the intersecting highway to a width of about 2 rods, with a clearance of between 10 and 12 feet.

"These bridges will be 50 feet wide or slightly in excess, so that the entire parkway will be made available when crossing these highways. At convenient intervals, or wherever the cross-island traffic makes it imperative, there will be built entrances or toll gates, artistic in design and intended to comport with the general natural surroundings.

"At some convenient point there will be established headquarters for the conducting of road racing events or races of endurance, reliability and economy. In connection with this there will be grand stands, parking accommodations for motor cars, and those conveniences and necessities demanded by the motoring public. Certain sections of this roadway where the turns are easy and readily accessible will be reserved for racing at high speed with high powered motors.

"While this highway has been referred to as a speedway, we are building it more for the object of a touring highway. We have not laid down an air line route to be followed, but are governed by the circumstances incidental to the procurement of rights of way, and incidentally to our desire to cross the properties at boundary lines and to avoid passing through villages and across holdings of small acreage. Three or four straightaways of lengths varying from 4 to 7 miles have been secured by the parkway commission.

"The road as projected will pass over hills. From one hilltop over which we pass the motorist will have the experience of being able to see Long Island sound on the north and the Atlantic ocean on the south. The route has also been selected for its picturesqueness, passing through heavy wooded tracts, skirting lakes, trout streams and threading its way through two or three valleys. The beauty of the scenery through which the parkway passes will not be the least of its many attractions, we believe."

Concerning the construction of the parkway, Mr. Pardington said that engineers engaged for the purpose are now considering the use of sand and gravel, with cement or hot tar, in varying proportions depending upon the character of the soil over which the highway will pass.

"The drainage problem is practically negligible," he continued. "Our greatest problem will be that of having a waterproof road, in order that the surface water resulting from rain or snow may not be permitted to trickle down through to the foundations."

#### HOOSIERS HAVE SHOW WEEK

Indianapolis, Ind., March 18—The city is in gala attire today and will remain so all week. For the first time in its history Indianapolis is having a motor car exhibit in full keeping with the importance of the industry. It is unfortunate the city does not boast of an auditorium sufficient large to give an indoor show, but the dealers have struck upon the next best thing, and the only thing possible under the circumstances. For the week the dealers and manufacturers have joined together and are working harmoniously to attract visitors to the city. The twelve garages and agencies are all beautifully decorated, and with one exception each has an elaborate display of the lines for which they have the agencies. The one exception is the Victor Automobile Co., which has just been organized and has not had an opportunity to get in models of the three lines it will carry. Every company has some special attraction worthy of note, and it is expected that fully 5,000 visitors will be attracted to the city during the opening week. This afternoon a parade in which all manufacturers and dealers, together with a number of owners, took part was held on the downtown streets.

#### NEW A. M. C. M. A. SCHEME

New York, March 18—In response to numerous applications received for sales managers, factory superintendents, salesmen and demonstrators, an employment bureau has been opened by the American Motor Car Manufacturers' Association. It has been thought that since good men are so hard to get such a bureau would be useful to members. Applications are to be held confidential and may be addressed to Alfred Reeves, general manager, 29 West Forty-second street, New York.



NH Van Sicklen, Manager

Subscription Two Dollars a Year  
Foreign Subscription Four Dollars



MOTOR AGE



Charles P. Root, Editor

New York Office,  
29 West Forty-Second Street



309 Michigan Avenue, Chicago

Published Every Thursday by the Trade Press Company  
Entered at the Chicago Postoffice as Second-Class Matter

The Western News Company of Chicago and Its Branches Supply Newsdealers

### VALE THE FAT SPARK



NE BY ONE the gods of brass are compelled to disclose their feet of clay. The last to go the way of all motoring shibboleths is the "fat spark." Hitherto the motorist has vested his present comfort and future enjoyment in the possession of a fat spark. When motors have gone badly owners secured a higher voltage and blessed the fat spark that gave the increase in power sought; when they have gone well homage was paid to the fat spark, which is credited to the geni of the motorist's particular lamp. But here come the irrepressible Edge and an electrical savant, Professor Watson, to show that the fat spark is an impostor, or at least his fatness is not his virtue. Mr. Edge got in in front of the professor in the usual communication to the press, but the latter's lecture to the Automobile Club of Great Britain was certainly the most convincing. Each indicated that it was a fallacy to increase voltage beyond the point necessary to secure a spark sufficient to explode the charge. Mr. Edge indeed seemed to show that it was a mistake and caused a loss of power. But the cogitations of experts on the phenomena is summed up in the dictum that the heat of the spark must vary with the degree of compression in the cylinder, which seems all right and will do to go on with. But people have a haunting fear that some day another vandal will arise and show that also to be a myth. The only thing real and indisputable about the present day motor car that has not been upset is that one cannot make it cheap and good at the same time. Yet even that creed will probably have its day.

### NOT SLOW—SENSIBLE



ST. LOUIS is somewhat like Philadelphia in that it has for many years furnished considerable amusement in stories of being in the slow class; as a matter of fact, however, St. Louis may be credited with moving along in a class by itself, for it is preparing to promote a road race for practical cars and not for racing monsters that are especially built for speed and that do not show what the ordinary car can do in the matters of speed and reliability. Every day the papers are filled with publicity stories of what this or that car can do or did do in a private trial; non-motor stop runs have been done to death; wild rides and strenuous stunts have been described and pictured—but the public never saw these affairs and there has been no official certificate that many

of them ever were performed. Because of the frequency of such trials and of the self-boasting given them much of the value of the performances has been lost. St. Louis proposes to permit makers of ordinary stock cars show what they can do in a real race on a real road and then let the world know all about it. The authorities of the county have given their permission to hold the race, the promoters are to fix the roads to make them safe for high speed and now the makers or the agents or the individual owners may have it out with one another and tell their hard luck tales after it is all over. But the winner will have the satisfaction of knowing that his car did all or more than he claimed for it and he will in turn receive all the advertising to which he is entitled. This is the sort of an event that will compel the makers to put quality in their products, and the sort that will justify display advertising to the multitude. It may stir up a little trouble among the country residents at first, just as did the Vanderbilt cup race, but the farmer will become as interested as anybody and will join the authorities in granting permission to hold such a race, even if the state laws do not specifically state that such permission may be granted at all.

### GOODS ROADS AND THE MAKER



CONSIDERING the fact that this country has about as poor public roads as any place on earth it is not at all remarkable that people should marvel at the immensity of the motor car industry and the demand for motor cars. When it is recalled that the demand for cars practically exceeds the supply, notwithstanding the abominable highways that must be traveled, the natural inference is that there is really more to motoring than even the most ardent supporter thereof can imagine, and if the present demand is based upon the existing road conditions what would be the result were the roads so improved as to be the equal of those abroad? When manufacturers of motor cars arrive at a point whereby they have time to sit down and seriously take these facts into consideration, will they awake to the necessity of beginning a campaign for the betterment of the highways that must, eventually, at least, mean much to them in a business way? Of all the interests identified with motoring the manufacturers have given as little thought and as feeble support to the good roads problem as could well be imagined, yet good roads naturally mean the life of the motor car manufacturing industry. Some time these same manufacturers will awake to the fact

that they might have done more toward securing good roads in order to keep alive an interest in motoring, and they will then begin a work that might have been begun several years before with most beneficial results not only to themselves, but to the users of motor cars and the users of the highways in general. It is a proposition for the manufacturer more than for anybody else to take action on.

### CONVINCING ARGUMENTS



DEMONSTRATION goes farther as an argument than all other forms put together and one of the troubles with the motor car fraternity is that it has not given as many demonstrations as it might have given. Each winter some state legislature has before it for consideration a new motor car bill and usually the bill is opposed in some of its particulars by motorists. It is usually on the question of speed and it is because the maximum speed is placed at a figure that, in the light of present-day control of modern motor cars, naturally appears to be bordering on the ridiculous side of the question. The whole trouble is that the motorists are not prepared to argue their case except through the medium of briefs instead of by means of practical tests. The average legislator is not a motorist—he will be some day, but he is not now—and it is not surprising he should believe motor cars are dangerous when he has heard only one side of the story for years and years. If the motorists of Missouri had followed their own rule and had spent a little time showing, possibly their legislature would have been satisfied that a 10-mile speed in cities or a 15-mile speed in the country is a somewhat antiquated notion and not worthy recognition on the part of any modern house of representatives. Motorists have been turned down in several states during the past winter, as they were a year ago; in all probability they will be turned down again next winter. But as the motor car becomes better known, as its ease of control is demonstrated, the turning down process will diminish. Well planned demonstrations of motor car control will do more toward bringing about reasonable laws than will track racing, road racing or speed stunts of any description and in the long run these demonstrations will be of more benefit to the makers as advertising mediums than will the speed stunts, the non-stop runs and all such affairs. A well organized effort to make these demonstrations during the next year or more will be the only means of convincing the unconvinced.





## CURRENT COMMENT



FRANCE is to try the experiment of running two distinct road races at the same time. Whether this is simply for the purpose of furnishing the spectators with a little additional excitement at the same time and at the same price is not stated. Ordinarily one big event is sufficient to keep up the excitement of the spectators and to worry the officials, but as the French travel at a faster pace than most other people on earth possibly they need a little more stimulation.

LOCAL shows will not down; at least one a week is practically assured about this season of the year. This week it is Providence, R. I., that is showing all the good things to its people with the idea that they may be interested enough to buy a car or two and incidentally to get their admission money, which will in all probability be cheerfully given.

RULES for the 1907 Glidden tour are promised for publication a week hence and Chairman Hower of the touring committee asserts that when they are finally formulated and adopted they will have been so carefully considered that little fear is entertained that they will appear unsatisfactory to any. The committee might gain some splendid ideas if, after the rules are practically completed, they should be submitted to some of those who have been contestants in previous

Glidden tours in order that any objections that could be brought out will be found more readily by contestants than by those who may be good rule makers but who may not see the matters as the contestants see them. The rules may meet with general favor, but dissatisfaction will crop up not only before the tour starts but after it has been begun and after it is all over—there will be no such thing as satisfying all who participate.

HISTORY is repeating itself. Years ago the bicycle trade set apart a certain week as show week and when all the dealers in the particular city cleaned up and dressed up and decorated their places with flowers and received—and incidentally sold, if they could. Now the dealers in motor cars and accessories are to try the same scheme, New York, Chicago and Indianapolis having decided that one show would not suffice to bring into the fold all the prospects. It is a good idea, nevertheless, and ought to be the means of adding a good many names to the order books that are already pretty well filled for the early delivery of cars.

THERE'S no use talking—the motor car will not down. It has shown itself in about all the crises of modern times. During the fire at San Francisco it did wonderful work after the noble horse had failed; after the earthquake in Jamaica it again came before the public; and during the flood at Pittsburg had it not been for the motor car many lives must have been sacrificed and much suffering endured. And with all these evidences of the great utility of the motor car, there are some people so narrow minded as to retain a prejudice that would do justice to the Puritans.

STARTING the Glidden tour at Cleveland, going thence to Chicago and to New York by way of Pittsburg, is a concession in part to the demand of the west for a taste of the tour, something it has never had. Putting Chicago at neither end of the route is probably the result of the differences of wishes on the part of the two Chicago clubs members of the American Automobile Association, inasmuch as to start or finish the tour in Chicago would satisfy one and dissatisfy the other, while putting Chicago in the middle would give no material cause for one club to gloat over the other. As it is, a large portion of the route mapped out by Motor Age has been adopted and many of the

western cities identified with the motor car industry will have a chance to see and entertain the tourists.

AMERICA'S typical car, as discovered by an esteemed contemporary, from an average of all the home-made cars, would sell for \$2,834, would weigh 1,750 pounds, would have four 4½ by 4½-inch cylinders giving 30 horsepower and would carry four people. There are some little inconsistencies in the make-up of the statistics, but this is only natural when it is considered that there are so many different designs and so many different ideas generally represented in the cars on the market today, but the figures, printed elsewhere in this issue, will serve to show what constitutes the average American-made car.

GEORGES DUPUY has stirred up all of Europe over his gold cup tour scheme. France has been tearing her hair to think that an army of American makers dares to invade her sacred precincts, and now England promises to extend an icy mitt to the gold cuppers, as they have become known. All of this is most gratifying to Americans and must be particularly so to Mr. Dupuy. Naturally all this fuss makes people believe the tour is something more than talk and that the American makers are ragged thorns in the sides of the foreign makers.

## THE WEEK IN BRIEF

Conference of A. A. A. and N. A. A. M. people in New York results in adoption of tentative Glidden route, starting from Cleveland and taking in big cities, including Chicago, Pittsburg and Detroit.

A. R. Pardington addresses American Road Makers' Association at Pittsburg and gives new facts concerning Long Island motor parkway; 44 of 60 miles of right of way secured free.

Despite contrary rumors it is more than probable A. L. A. M. will get Madison Square garden for November show.

St. Louis decides to have road race for stripped touring cars on July 4; permission secured from authorities.

Frenchmen making every effort to swell entry lists to grand prix, sportive commission and Press cup races.

Bert Dingley has adventurous trip on Los Angeles-San Francisco course in preparation for race.

Silent Knight successfully tackles famous bumps at Glencoe in test of new springs.

Show week now in progress in Indianapolis; no suitable building for regular show.

Some fifty exhibitors occupy space at show in progress at Providence, R. I.

Mitchell company another American concern to open branch in Paris.

Motor car again proves its worth, this time at flooded Pittsburg.

## COMING MOTOR EVENTS

March 21-30—New Haven industrial exposition and motor car show, in state armory, New Haven, Conn.

April 2-15—Monaco meeting.

April 1-6—St. Louis Automobile Dealers' Association, show at St. Louis in Jai Alai building.

April 6-13—Montreal, Canada, second international motor car and sportsman's exhibition. R. M. Jaffray, manager, 309 West Notre Dame street.

April 8-13—Pittsburg Automobile Dealers' Association show at Pittsburg in Duquesne garden.

April 11, 12, 13—Denver show, G. A. Wahlgreen, manager.

April 18-20—Targa Florio, in Sicily.

April 25-28—Touring competition, under auspices of the Automobile Club of Turin.

April 28—Chateau Thierry hill climb.

May 1-15—Paris-Madrid touring competition to Madrid exhibition.

May 18-21—Auto-Cycle Club of France, Paris-Ostend-Paris.

May 24-27—Automobile Club of Austria, viettrette contest.

May 15-31—Automobile Club of the North, industrial vehicle competition.

May 18-21—Milan touring competition.

May 31—Automobile Club of Auvergne, Rochet-Schneider cup race over Auvergne circuit.

## EUROPE IS THEIR GOAL

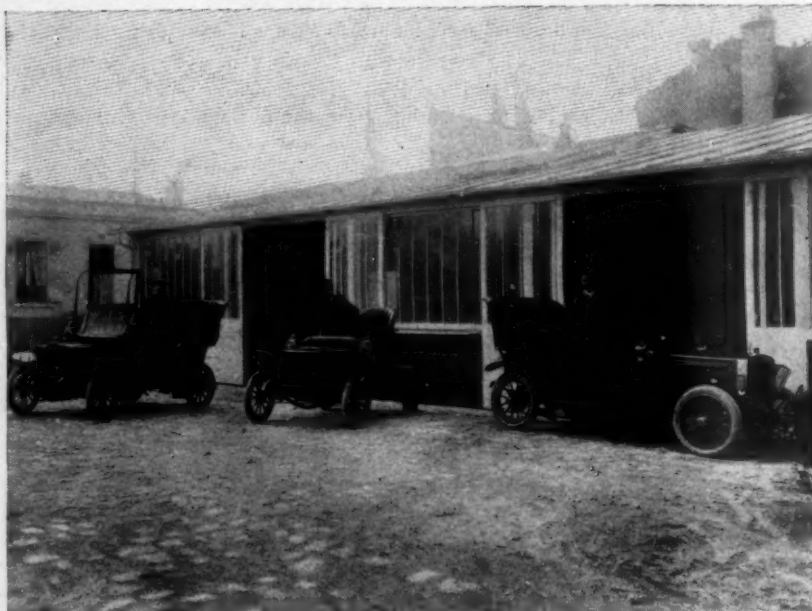
### American Makers Seeking Foot-hold on Continent—Mitchell Opens Branch in Paris

Paris, March 13—A deal of turbulent writing and talking has been going on in France of late regarding the dreaded coming of the American manufacturer, who, with method and hustle, is going to undertake a live fight with the French makers. As a matter of fact the news has considerable truth in it and more than one American concern has had its representative looking sharply into trade prospects in Europe, the trading center of which is still Paris. The present is the second organized American attempt within recent years to create European branches and this time there is much more chance than in 1900 to start a flourishing trade. French factories are working at their top speed and output and are yet unable to keep up with the demand for cars, although they do perhaps fairly well supply the French market. On the other hand the Americans will not now bring to Paris merchandise of a kind which Paris does not want. This would be folly twice repeated. What American makers must do, in order to get a footing in Europe and a paying business in France, is to send over something which the French cannot get, and this is a good two-passenger car at a fair price. Much might be said on the types which the French regard as a practical runabout, but, except for one or two makes, their car is only a diminutive touring car and not the ideal either in type or price.

The Mitchell Motor Car Co. is the pioneer of the new movement to create a good trading basis in Europe and has stepped into the stronghold of French industry at Courbevoie, in the northwest of Paris. A very careful study of the prevailing conditions has convinced the Mitchell company that a Paris branch was a necessity, hence the step. The Mitchell machines, made in Racine, Wis., in two models only, are turned out there in considerable numbers and of course cheaper than can be done by the majority of French firms, are imported into France and drafted to the Courbevoie works. The machines are imported complete as seen on American roads, except for tires, which are of French make and fitted at the depot.

The Mitchell company's output for 1907 being already practically disposed of in

its entirety, the French agency will have to feel its way during the present season with a score or so of machines. Just as soon as the 1908 models are out, however—that is, in the fall—business will be pushed on a large scale. The first few cars shipped over here will be used for exhibition and for trial purposes. The Paris manager, C. N. Sauerbach, believes there is room in France for a number of the best American concerns whose annual output for a single model is a large one. The duty levied on motor cars coming into France is roughly \$12 per 225 pounds, which works out at \$120 for a motor car weighing 1 ton. This is a small import duty. The freight on cars may be reckoned as \$30 per ton when several cars are shipped together, this carriage including all charges from New York to the Paris depot. The depot might easily be situated, however, at Havre or Marseilles, or at both places, according to the destined market, and the



PARIS DEPOT OF MITCHELL MOTOR CO. AT COURBEVOIE

expenses of transport would be much reduced. This detail is important if the importing concern desires to do a trade over all western Europe.

### POPE STRIKE OVER

Toledo, O., March 16—Once more peace and quiet reign at the big Pope-Toledo plant. The agreement which was reached last Monday following a renewal of the 6 months' strike which was settled for 10 days is a highly satisfactory one to both sides. In fact this is the only statement that will be given out concerning the settlement—that it is highly satisfactory both to men and employers. The reason for this is largely the fact that the renewal of the strike was due in a great measure to the public announcements of both sides, which were antagonistic to both. Now it is all over and work is being rushed at the factory, which is running night and day and orders will be filled as if nothing had happened.

## WORKS ON BIG EVENTS

### France Preparing for Grand Prix, Sportive Commission and Press Cups Billed for 1907

Paris, March 10—The organization of the grand prix, the sportive commission cup and the Press cup continues to afford a deal of work and discussion among the French club officials. First of all, it is decided to keep open the grand prix entry list until April 15, that is, of course, at double entry fee. It is doubtful, however, if any firm will wish to pay \$2,000. However, the bait is there and can be taken at any time between now and April 15. The sportive commission cup race undoubtedly will take place on the same day, if at all, and the cars probably will be started later than those in the grand prix. The detail is,

however, not settled, for the cars have but 500 kilometers to cover and their rate of speed will be less than the racing monsters so if the cars are started after the grand prix cars there probably will be the additional excitement of the two races finishing together. It is understood that at the starting point opposite the grand stands there will be a turnout from the main racing track, along which cars will pass at full speed. This turnout will have the length of about 500 yards and will be constructed of wood. Here will be situated the revictualling booths and other official offices.

The cars will all be started from here and in addition all machines slowing down for fuel or water will turn out just at the grand stands, and leave the main track free for the racing cars flying by at full speed. This is a novel idea. From the turnout, cars can be started without inconvenience and it is from here that the nine cars of the sportive commission cup will be started very probably during the racing of the grand prix.

The A. C. F. has decided it will undertake the task of putting all the roads leading to the circuit in order, especially those out of Paris. The club will not expend any money on this, but will ask the public bodies and municipalities through which the roads pass to see that their highways are in good condition for the thousands of cars which will proceed from Paris to the coast on the great day.

The Press cup which is settled to take place after the Criterium of France, which latter takes place August 2 to 6, has given



the committee some trouble as regards the amount of fuel which should be allowed to each competitor. Opinions have wavered between 4 and 5 gallons, and the consensus of opinion now says that the quantity shall be 18 liters per 100 kilometers, which equals 4¾ gallons per 62 miles. The cup will be raced over 1,000 miles in four daily stages and the average speed is minimized to 25 miles per hour and the weight of each car must be 3,700 pounds, including the weight of four passengers.

#### NOT GOLD CUP ENTHUSIASTS

London, March 10—There is a very pronounced disposition to favor long-distance reliability tests instead of these 1-day bursts and if there is no change in view before the autumn one may expect to see a big event of the competitive kind set up for 1908. English manufacturers are watching with curious eyes the announced intention of the American trade to send over a brigade of American-built cars to tour Europe for 60 days covering 4,000 miles and winding up at Liverpool. It is so evidently an expedition intended to proselytize the European public toward American products that it would not be surprising if some attempt is not made to meet its advent here by counter attractions of a similar character. The fact of the matter is that the various sections of the European motor trade is in a very jumpy condition at the present time. Each and all has expanded so rapidly that none is really healthy and at best can only hope to maintain its present position by having a cinch on its own markets, and a good slice off its neighbors'. France is the European Ishmael in this game, for it is at its expense that all the other countries must achieve success and prosperity. Consequently the French trade is standing under arms. It is evident that if the American invasion is a success the reception in France will not be as cordial as diplomats would wish while the attitude of the Britisher will be more than ordinarily standoffish. Under such circumstances it need not be written here that the prayers of the faithful are being given toward frustrating even the possibility of an American success. At the same time acute observers here admit that the American invasion of the European market is only a question of time and hope that you will find so much to occupy yourselves with at home that we shall have had time to put our houses in order before the storm bursts.

## ROAD RACE ON FOURTH

### St. Louis Promoters Schedule 150-Mile Contest for Stripped Stock Touring Cars

St. Louis, Mo., March 18—The promoters of the St. Louis show have arranged for a 150-mile race for stripped stock touring cars on the roads of St. Louis county July 4. A trophy worth \$500 will be awarded to the winner of the race. Consent of the St. Louis county officials has been obtained. The race will be started at 5 a. m., July 4, and will be finished in about 3 hours. The start will be made on the Hanley road, near the Glen Echo Club. The route will then be north 2¼ miles to the Natural Bridge road, thence west 9 miles to a point where the Natural Bridge road intersects the St. Charles rock road. Here the cars will

the money to buy the trophy and defray the expenses of the race. The intention now is to make the race an annual affair. The holder of the trophy will be required to win three contests before it becomes his personal property. The race will be run for the purpose of advertising and stimulating interest in motoring in St. Louis. The circular track races held each year in St. Louis, while successful from the point of attendance, always have resulted in serious accidents, either to drivers or spectators.

As no sporting events are scheduled in St. Louis for July 4 the promoters expect that the country will be filled on the Fourth with people eager to see the race.

#### AGAIN THE MOTOR CAR

Pittsburg, Pa., March 18—One of the penalties which Americans must pay for reckless denudation of forests is that the rivers of the country periodically overflow their banks, causing great damage to property and frequent loss of life. While no section of the country is exempt from these catastrophes, the spring freshets along the Ohio river and the streams which flow into it have in recent years been particularly destructive. During last week's flood the water reached the highest point in Pittsburg ever recorded, and a considerable portion of the lower section of the city was inundated. So rapidly did the water invade the residential districts, both here and in Allegheny, that people had great difficulty in escaping from their homes.



WHITE STEAMER IN RESCUE WORK IN PITTSBURG

make a sharp turn and go east on the St. Charles rock road to the starting point. The route is about 20 miles long, and it is proposed to send the cars around seven times. Ropes will be stretched at the sharpest turns in the roads to avoid accidents.

The promoters of the race will endeavor to get the builders of touring cars interested during the week of the show here. Cars built especially for racing purposes will not be eligible for entry. One purpose of the race is to demonstrate the racing and endurance qualities of the average touring car. Cars will be sent away from the starting point at 1 minute intervals. The dusty parts of the roads will be thoroughly sprinkled and oiled before the start is made. As all but a short section of the route is either of rock construction or macadam it is expected that the dust along the road race course will not greatly hamper the event.

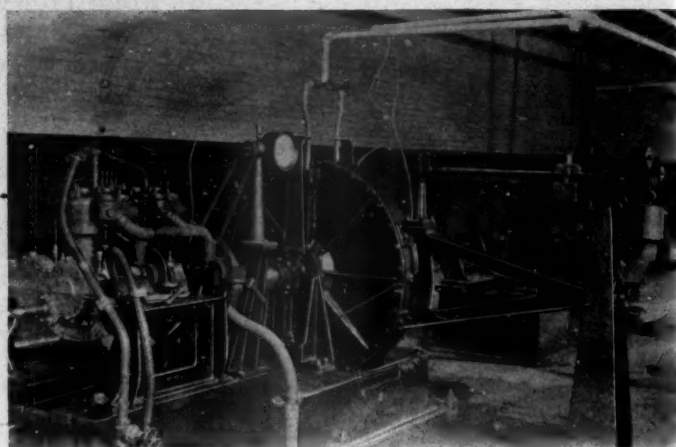
St. Louis business men have contributed

culty in escaping from their homes. Row boats were the principal means of transportation, while ice boxes, tables, in fact anything that would float, were pressed into service to escape the rising waters. Over twenty lives were lost in Pittsburg alone by these frail craft either upsetting or being swept out into the river. The motor car, which so often has done good service where quick action was essential, showed its usefulness in a new field. H. I. Cashman, of Pittsburg, who had driven his White steamer down to the flooded districts in the city of Allegheny to observe what was happening, saw at a glance that he could use the car for service. Accordingly, he drove into the streets along the water front and carried load after load of people to places of safety. The boatmen were charging \$5 per passenger for this work and many of those without the necessary funds would have had to rely on very uncertain means of escape had it not been for Mr. Cashman.

# MOTOR TESTING BY HYDRAULIC BRAKE



RUNNING MOTOR BY ELECTRIC MOTOR



MOTOR UNDERGOING HYDRAULIC TEST

THE American Locomotive Automobile Co., manufacturer of the Berliet car, has in its motor testing department at its plant in Providence, R. I., a hydraulic brake, which absorbs and accurately measures the brake horsepower developed by the motors. After assembling, the motor is placed on a jiggling stand and driven by a variable speed electric motor for the purpose of polishing the bearings, pistons and other wearing parts, and reducing their friction to a point where it is safe to run the motor under its own power. The variable speed electric motor lends itself admirably to this purpose, as it permits beginning the operation at a very low speed and gradually increasing to a speed approximating that of the motor when run under normal conditions. During this period all wearing parts are flooded with oil, and closely watched to guard against excessive and injurious heating of any part.

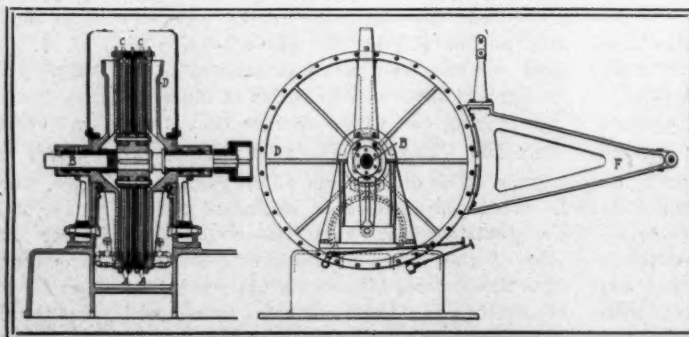
After the satisfactory termination of this operation the motor is transferred to the test stand proper to be run under its own power. The test stand consists of a heavy cast iron bed plate, supporting the hydraulic brake at one end, and with suitable brackets adaptable to the different size motors at the other. Flexible connections are used for water, gasoline and exhaust pipes to facilitate coupling up and dismounting the motor before and after a test. At first the motor is run without load, and any adjustments which may be necessitated in the carburetor or ignition apparatus are made. After being well limbered up a load is then applied by means of the hydraulic brake, which consists of a casing D or stator, provided at each side with trunnions, supported by segment struts, which in turn rest upon knife edges. The rotor consist of four steel disks A, 40 inches in diameter and  $\frac{1}{4}$  inch thick, securely

keyed to a substantial shaft B driven from the motor by a universal-jointed shaft and multiple disk friction clutch. The brake disks revolve in four separate compartments C within the casing, but clear the walls in all direction by  $\frac{3}{8}$  inch, the only metallic contact between the rotor and stator being in the bearings which carry the shaft B. The casing D is free to revolve through a very small fraction of a degree, its movement being absolutely without friction because of the manner in which it is supported. From the periphery of the casing an arm F projects, the end of which is linked to a steel beam supported on knife edges by a pillar in the same manner as the beams of platform scales, the whole forming a compound lever, corrected for balance by an adjustable weight. The scale beam is graduated to read pounds, and by means of a vernier 1-10 pounds, a sliding weight being moved along the beam by means of a screw and hand wheel, so arranged as not to disturb the balance. The leverage of the beam is so calculated that at 1,000 revolutions per minute 1 pound represents 1 horsepower, and proportionately, more or less, according to the speed. One-tenth pound read on the vernier therefore represents 1-10 horsepower at 1,000 revolutions per minute, and is proportionate at varying speeds. The pounds pull thus registered is proportionate to the torque of the motor, and by dividing this figure by a constant

the torque at 1 foot radius can be readily determined for all speeds.

When it is desired to take a brake reading the multiple disk clutch, which is spring actuated, is permitted to engage gradually, the brake disks A then being driven by the motor. Water is then admitted to one of the end compartments C near the shaft B and its flow regulated by an ordinary globe valve. Centrifugal force carries the water out to the periphery of the disk, creating an enormous pressure, the water serving as a friction medium between the steel disk A and walls of the compartment C, the result being a tendency of the casing D to rotate with the disks in direct proportion to the friction, and hence to the torque. Whatever friction results from the rotation of the shaft in the bearings of the brake casing has a tendency to revolve it in the same direction; therefore the entire power developed by the motor is accounted for by the weighing apparatus, which counteracts the tendency of the casing to rotate. It will be seen from this that no losses occur in the transmission of power from the motor to the brake, and readings are accurate to within a small fraction of 1 per cent. If one disk or compartment is not capable of absorbing the total power of the motor, the compartment at the other end of the casing can be brought into service, and the water in these compartments may be transferred to the inner compartments by

means of by-pass valves, thus bringing all four disks into use and absorbing the maximum power of which the brake is capable. By varying the quantity of water in the compartments a very flexible control is obtained. This is done by regulation of the inlet and outlet, or drain, valves. The mechanical energy of the motor is converted into heat inside the brake and is carried off by the water, at a low temperature.

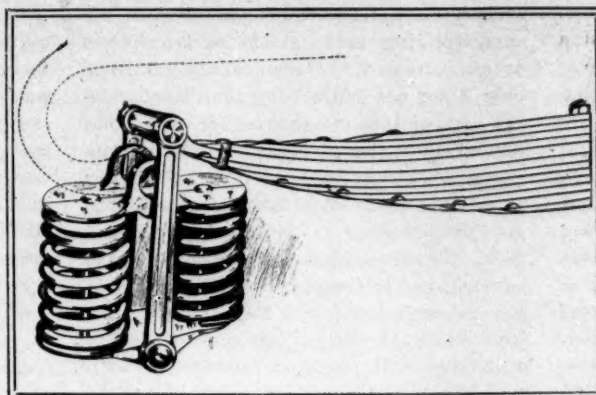


BERLIET HYDRAULIC BRAKE TEST MECHANISM



## GLENCOE BUMPS ROBBED OF ALL TERRORS

**S**HOCK absorbers have received more than the ordinary attention during the past fall and winter. So great in fact has been the attention bestowed upon them that a host of makers has sprung up and many car builders provide absorbers as regular selling equipment. The old stories of broken springs and "pitched out of the back seat" have caused this pronounced trend and many are the principles used in the different makes. The earliest history of vibration eliminators was during the year of the Bennett cup race in Germany, when the winning Brasier car and several of the other makes of machines were fitted with Truffault-Hartford friction absorbers which make soon was introduced into America and which remains today in improved form. Following in the wake of this pioneer came the myriads—some pneumatic, others hydraulic, and many various styles of enclosed and open spiral spring arrangements placed to act between the end of the spring and its attachment to the spring hanger iron. A style somewhat different from the ordinary and one in which the spring itself is made the shock absorber in part has been used on the Silent Knight car, built by Knight & Kilbourne, of Chicago, for a couple of seasons. It is after the design of Charles Y. Knight, designer of the Silent Knight car, and consists of two principal parts: First, a peculiar style of semi-elliptic spring and, second, a dual style of supplementary spiral spring inserted between the ends of the springs and the car frame in place of the ordinary shackle linkages. The Knight semi-elliptic spring is made with twelve leaves and very slight arch, the spring being practically horizontal with the car loaded. The front springs are made 42 inches long and are made with the long leaf having end eyeholes for shackling. Beneath this leaf are seven others of varying length for sustaining the load. Above it are four more leaves



KNIGHT SPRING WITH DUAL SPIRAL

which assist in carrying the load and act as shock absorbers. The four upper leaves press downward when the spring stands normal and aid the load in depressing the lower leaves. These upper leaves are held to the lower leaves by a clip at the outer end of the longest leaf and by a rivet through each shorter leaf securing it to the leaf below and guarding against lateral displacement. In case of a sudden depression of the spring past its center the four upper leaves act in strengthening the eight lower leaves and when a rebound comes they prevent the lower leaves from a sudden rise and hold them down. The rear pair of springs are made 52 inches in length and have fourteen leaves, nine below the central leaf and four on top. The entire set of four weighs 200 pounds. Acting in connection with these springs are dual supplementaries shown in the illustration. Clamped between an upper and lower forged plate are two vertical spirals, the plates held together by central bolts rising within the spirals. The curved spring hanger bolts directly to the top plate and the end of the spring is linked to the center of the bottom plate. Besides the two spirals giving a better shock-absorbing effect than a single spiral there is the advantage that the spirals always hang vertically irrespective of the load. The links from the bottom plate to the spring eyehole incline according to the

load, but the spirals never depart from the vertical. A set of four spiral supplementary springs, two for the rear springs and two for the back end of the front springs, weighs 30 pounds.

Last week Mr. Knight made a test of these springs, selecting for his jousting ground the streets of Glencoe, a lakeshore suburb 25 miles north of Chicago, and on which streets the famous bumps were constructed in the fall of 1905 to cause motorists to reduce speed when passing through the place. The bumps made consist in elevating the crossings for the pedestrians 6 inches above the street level, making them of brick and giving them a formidable rise at each side. The width of them is slightly over 3 feet. As a result of these obstacles many motorists have come to grief with broken springs and in some cases tonneau passengers have been thrown out. The Silent Knight car, loaded to a total weight of 4,000 pounds, two passengers in the front seat and two in the tonneau, traveled over these bumps six times, taking them on each occasion at right angles, no attempt being made to "angle" them or take them close to the sidewalk where they are slightly lower. On the first occasion the speedometer showed 24 miles per hour, at which speed the tonneau passengers, without bracing their feet on the floor, did not leave the cushions. Later the speed was increased to 30 miles per hour and at this speed one of the tonneau passengers sat with his arms folded and feet straight to the front, not touching the floor or the back of the front seat and in this position he barely left the cushion and was not overbalanced after the bumps were past. It was noted by the tonneau passengers that much of the jar received comes from pressing back against the back of the seat in which position a considerable forward movement of the back of the seat is imparted to the passengers and which produces a very sudden jar.



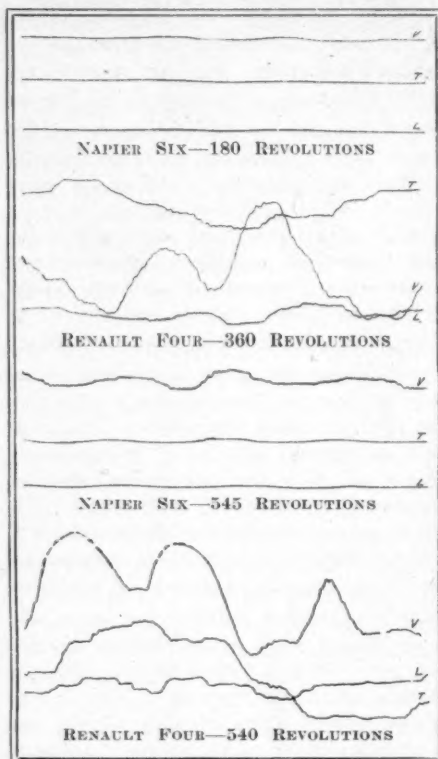
SILENT KNIGHT CAR APPROACHING BUMP AT 30 MILES PER HOUR AND CROSSING BUMP AT SAME SPEED

## MODERN MOTOR CAR MECHANICS

S. F. EDGE, patron saint of the six-cylinder type of motor, has had a verbal battle with the four-cylinder brigade before the Automobile Club of Great Britain and Ireland in which he first furnished the arguments, then let the others attack it. Mr. Edge opened his talk by pointing out that the engine complete with flywheel and all piping in a six-cylinder 40-horsepower Napier weighed but 681 pounds, as compared with 706 pounds in the motor of a four-cylinder 35-45-horsepower Renault which he used for his investigations. In the case of the radiator, rear axle complete without road wheels, gear box complete with foot brakes, drum and front half of the universal joint he asserted the Napier was lighter and that per horsepower the Napier showed 14.7 pounds as against 15.7 in the French product. So far as the measurements of the cars were concerned he claimed there was little difference between the two. The distance from the front of the front cylinder to the back of the dashboard was 39 for the Renault and 40¼ inches for the Napier. From the front of the crankshaft bearing to the dash the Renault showed 41½ inches as against 43 for the Napier. The Renault engine was 39¾ inches from the ground and the Napier 37½ inches. The clearance between the bottom of the flywheel and the ground was 8 13-16 inches on the Renault, and 10⅝ inches on the Napier. The French car had 36 inches wheels and his 34.

Mr. Edge pointed out that a 40-horsepower engine with a single cylinder of 10 inches in diameter would strike a blow at every explosion equivalent to 28,282 pounds on top of the piston. For two cylinders to give 40 horsepower, the size of the pistons would be nearly 7 inches and the blows equivalent to 14,141 pounds. Three cylinders to give 40 horsepower would have to be about 5⅝ inches and give blows of over 9,000 pounds. A four-cylinder engine would have cylinders nearly 5 inches in diameter and give blows of about 7,000 pounds. In a five-cylinder engine the blows are reduced to about 5,556 pounds. In a six-cylinder engine the blows are reduced to 4,713 pounds, which means twelve comparatively little blows in the same period of time that it would have had two of the large ones. Taking up the question of whether there is slightly more loss in wall heat in the six-cylinder as compared with the four, that this makes the six-cylinder engine less efficient, Mr. Edge asserted that in figuring his calculations he estimated the area of the cubic space above the piston of a four-cylinder engine giving 44 brake horsepower at 1,200 revolutions per minute, with a piston speed of 1,100 feet. The area of the space above the piston through which the heat would be lost is 325 square

inches. With the six-cylinder Napier the corresponding area is 335 square inches or an increased wall area of only a little over 3 per cent, Mr. Edge contended. Going further into the matter, Mr. Edge contended that the piston area required by the four-cylinder to develop 44 horsepower is no less than 82.48 compared with the six-cylinder Napier, which only requires 75.42 of piston area to develop the same horsepower at the same piston speed. Coming to cubic capacity, Edge claimed the superiority of the six-cylinder engine is still more strikingly put forward, as with a cubic capacity of only 301 inches 44



horsepower is developed at the same piston speed as the four-cylinder engine, but the four-cylinder actually requires 453 cubic inches to get its 44 horsepower. To put it in another way, the Napier man said the four-cylinder requires to be half as big again as the six-cylinder to develop the same horsepower at the same piston speed. He added that it is not a question of difference in vibration between the four-cylinder and six, but nearly one of absence altogether in the correctly designed six.

Then Mr. Edge resorted to the lantern to demonstrate his theories. The slides, he said, showed the two chassis—the Renault and the Napier—at identical speeds, as far as possible. The first plate was taken from a 40 horse power six-cylinder Napier chassis, just an ordinary one, picked out haphazard from a group. The number of the chassis happened to be 2,048. The top line, as seen in the slide, labelled "V," showed the vertical oscilla-

tions of the chassis. The line was not quite straight, but very nearly. The line immediately below this, labelled "T," was straighter than the upper one; this recorded what transverse vibration there was. The lower one, labelled "L," represented longitudinal vibration; it also was in a nearly straight line. When this particular record was taken, the Napier six-cylinder was running at 180 revolutions per minute.

"Pulsations and syncopated beats of a four-cylinder are distressing to the mechanism generally if the engine speed of a four-cylinder is allowed to drop," said Mr. Edge. "This is a point that is entirely absent in the six, no matter how slowly it runs, and is owing to the overlapping of the impulses. With four cylinders with cranks at 180 degrees there must be four points in the cycle when the cranks are at the dead centers, at which there is no turning effort. Napier six-cylinder cars have been found to be economical in gasoline in spite of any theoretical points there may be against this. The real thing probably is that six-cylinder cars are driven almost continuously on their top speed in traffic and for longer on the top going up hill. This means that the piston speed is relatively slow and a minimum amount of gasoline therefore is being used."

In the discussion by the four-cylinder brigade that followed J. E. Hutton contended that if one wanted a car to go slow with a maximum of luxury he favored a six-cylinder, but if a man desired to get maximum speed and efficiency he preferred a four-cylinder. Frederic Coleman asked Mr. Edge about the number of parts in the two types and the Napier man replied that he believed there were sixty-four more parts in a six-cylinder than in a four. Edge also contended that a car that did not require a change of speed was easier to drive than one that did. He also added that the Napier people gave a guaranty for 3 years on their sixes, an example which was not followed by their four-cylinder rivals.

### FIXED IGNITION

The matter of fixed ignition is receiving some attention abroad, the Renault concern having recently performed a number of experiments in this direction. The chief claim for the efficiency of a fixed point of ignition is that in driving there is difficulty in determining the most advantageous position of the spark lever and it is pointed out that when Mr. Napier won the Tourist trophy race with a two-cylinder car it was fitted with fixed ignition. Motoring Illustrated makes the point that there is nothing worse for a motor than driving on a too early spark owing to the fact that combustion takes place before the piston has begun its power stroke and

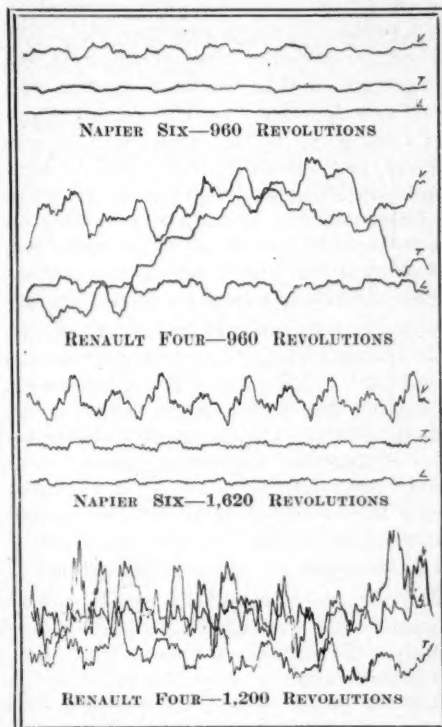


that, as a consequence, the force of the explosion tends to check the upward compression stroke, resulting in a severe knock, wear on the bearings and a perceptible loss of power. "Although the effects of firing the mixture too late are not nearly so grave and detrimental as are those consequent upon an early spark," says *Motoring Illustrated*, "still they are bad enough. Late firing causes overheating of the engine and of the valves, which consequently soon lose their accuracy of fit, and call for frequent regrinding and attention. The valve springs may also lose a good deal of their original temper, and give trouble that way. Incidentally of course the fuel consumption reaches abnormal proportions, and since the gases are only partially burned, sooting of the valves follows. Many people to all intents and purposes drive on a set spark either by ignorance or design, the former because they do not recognize, or perhaps even understand, the correct functions of the spark lever, and the latter because they will not be bothered to continually alter its position, being satisfied with the behavior of their car with a fixed sparking position. It is certainly better thus, provided the spark lever is set in an intermediate position, which in practice is a little over half-way, taking it for granted, of course, that the spark lever is set correctly in relation to the contact maker.

"We do not know what type of engine Renault used in his tests, but surmise it was a four-cylinder machine, which, with its comparatively even balance and torque, nullifies to a great extent any loss of power due to the spark being slightly late. It must be remembered that good as modern ignition systems are they cannot be relied upon absolutely to produce a spark between the plug points exactly at the same time in relation to the position of the piston with every firing stroke; the spark may be consummated a little late at one revolution and practically at the most efficient time at the next firing stroke. This variation can be traced to several causes, the most common being imperfect electrical contact at the commutator, or sluggishness of the trembler on the coil due to varying magnetic force in its core. In the case of single and twin cylinder engines with their comparative absence of balance and torque, a late spark has more serious consequences, the fewer the cylinders the worse the effects.

"Drivers of single-cylinder engines would be very sorry to have their spark control levers eliminated or fixed in one position. It is essential—if every ounce of power is to be secured—that the spark in the cylinder takes place at such a time that it ignites the combustible mixture when the piston is in the best position to receive the full effect, which is when it is about to start on the downward power stroke. If the piston speed were always constant the spark lever could then easily be set at this one position, but the

range of speeds at which a modern engine runs makes it essential for the spark to be discharged increasingly earlier as the piston speed increases, in order to produce combustion at varying speeds at the most advantageous moment. There is another phase of the subject which we think may have had an important bearing on Renault's experiments—improved carbureters. Carbureter design has made great progress during the last few years, and in consequence we get a mixture into the cylinders which is so constituted that it gives practically perfect combustion at all speeds of the engine. When we compare a present-day carbureter with one representing the standard practice of only a year or so ago, we find that the latter produced a mixture at slow engine speed



which was over rich in gasoline. By feeding an excess of gasoline over that needed to form a correct mixture with the quantity of air supplied, the combustion is slow in taking effect, and the piston reaches the bottom of its stroke before the gases have spent themselves in useful work. Given a well-proportioned mixture, however, the combustion is practically instantaneous with the production of the spark. Any loss of power incurred is due to a portion of the working stroke being unused, and such loss is proportionate to the amount of downward travel performed by the piston after having passed the dead center before the mixture is fired."

#### THE TYPICAL CAR

Statistics of interest are compiled in Motor's 1907 motor car directory in which 255 different makes of motor cars are represented—223 of them American and the other thirty-two of foreign construction. The total number of models represented is

791—612 pleasure cars and 179 commercial propositions. Of the pleasure cars 530 are of the gasoline type—435 domestic and ninety-five foreign—and there are sixty-six electrics, one of them being of foreign construction. Sixteen of them are steam cars. The average wheelbase is 108 inches, with the longest 146 inches and the shortest 60 inches. The 791 cars placed one on top of another would form a shaft higher than the Eiffel tower, the Park Row Flatiron, Empire, St. Paul, American Tract Society, Commercial Cable, Broad Exchange, Bowling Green and the Bank of Commerce—the tallest buildings in New York—placed one upon the roof of the other and with the Statue of Liberty on top of the uppermost. The total weight of the 612 pleasure cars is 1,295,286 pounds, as much as the combined weight of the total population of Beloit, Wis., or of Portsmouth, N. H. It would take \$2,108,070 to buy one each of the 612 pleasure cars. The prices range from \$15,000 for an American-built racing car down to \$250. The average price of domestic gasoline cars is \$2,834; steamers, \$2,770; electrics, \$2,510; foreign cars, \$6,730. The average horsepower of the 612 is 30. The average weight of domestic cars is 1,750 pounds and of foreign cars 2,450 pounds, which makes the average weight of the total number of gasoline models 2,100 pounds or 70 pounds per horsepower. Dividing the total weight of the pleasure cars by the total selling price gives the average motor car a value of \$1.64 per pound. The average size tires used on the 791 models is 34 by 3½ inches. Continuing the dope further the typical domestic car would have the following specifications: Price, \$2,834; seats, 4 persons; weight, 1,750 pounds; wheel base, 108 inches; tread, 56 inches; tires, front, 34 by 3½ inches; rear, 34 by 3½ inches; steering, worm and sector; brakes, on transmission and rear hubs; springs, semi-elliptic; horsepower, 30; bore, 4½ inches; stroke, 4½ inches; frame, pressed steel; cylinders, four vertical in pairs; valve arrangement, on opposite sides; motor suspension, direct from main frame; cooling, water; ignition, jump spark; current supply, storage and dry battery; carbureter, automatic; lubrication, mechanical force feed; motor control, spark and throttle; clutch, leather-faced cone; change gear, sliding type; speeds, three forward and reverse; change gear control, selective system; drive, shaft.

If all the tires on the 791 models were set side by side close together and in a straight line the pipe so formed would be nearly four New York city blocks long, and of course 34 inches in diameter. If they were all laid down as close together as possible they would cover considerably over half an acre of land. If each tire were cut and straightened out and they were all arranged in this way end to end, a 3½-inch rubber hose pipe would be formed which would be 5.3 miles long.



# MOTOR CAR SHOP KINKS



## SQUARING PRACTICAL NUMBERS

Most formulas for horsepower have for one factor the square of the diameter of the cylinder bore, and when this is a fractional number such as  $4\frac{1}{2}$  it is convenient to be able to calculate the square mentally. This may be done by remembering that the square of the sum of two numbers— $a + b$ —is the square of the first, plus twice the product of the first and second, plus the square of the second; or, in algebra,

$$(a + b)^2 = a^2 + 2ab + b^2.$$

In the case in hand  $a$  is 4 and  $b$  is  $\frac{1}{2}$ , consequently the square of  $4\frac{1}{2}$  is  $16 + 4 + \frac{1}{4} = 20\frac{1}{4}$ . This is evidently equal to  $4 \times 5 + 1\frac{1}{4}$ , since  $2 \times \frac{1}{2}$  is 1. Therefore, to square a number consisting of an integer and  $\frac{1}{2}$  multiply the integer by itself plus 1 and add  $\frac{1}{4}$ . If the fraction is  $\frac{3}{4}$ , multiply the integer by itself plus  $\frac{1}{2}$ , and add 1-16. If the fraction is  $\frac{1}{4}$ , multiply the number by itself plus  $1\frac{1}{2}$  and add 9-16. Thus the square of  $4\frac{3}{4}$  is  $4 \times 4\frac{1}{2} + 1-16 = 18\frac{1}{4}$ . The square of  $4\frac{1}{4}$  is  $4 \times 5\frac{1}{2} + 9-16 = 22\frac{1}{4}$ .

## ECONOMY IN SPEEDS AND FEEDS

Metal may be removed faster by the use of a heavy feed and slow cutting speed than by a slow feed and higher speed. This assumes that the limit in either case is the ability of the tool to stand up. In the former case a great amount of metal may be removed in a given time for equal heating and dulling of the tool. The practical limit to the quickness of the feed is generally found in the springing of the work or the tool, or in the failure of the belt to drive, rather than in the heating and wear of the cutting edge, and consequently it is necessary to determine the quickest feed the work will stand, and then speed up the work to the maximum the tool will stand. An enormous amount of time is wasted in most shops by neglect to hold and support the work so that it will stand a heavy cut, and it would in many cases be well worth while to devise and keep in stock special fixtures for the commonest classes of jobs.

## DRAINING WATER JACKETS

If there is a chance in the circulating system for water to remain in pockets after draining the system to prevent freezing, it would be a good plan to start the motor and run it on a low throttle and partly advanced spark while the water is running off. This will tend to clear the pockets, and the heat of the motor will evaporate any water remaining in the jackets. Of course the motor should be stopped before it gets very hot. In case the pump is of the positive or gear variety a better expedient is to disconnect the hose close to the pump between the pump and

the waterjacket, after draining off the water elsewhere, unless there is a drainage cock provided for this purpose. The reason for this is that the positive pump will force water to the engine as long as water comes to it, and this water will be unable to run back through the pump. In case the carburetor is warmed by circulation of water, care should be taken to see that it also is properly drained.

## LUBRICANT FOR DISK CLUTCHES

To avoid dragging when a multiple disk clutch is released, the plates must run in a bath of oil, and this oil must be squeezed out before the clutch can take hold. The wider the contact surface of the disks, the longer will it take the oil to work in and out, and for this reason a contact width of from  $\frac{3}{8}$  to  $\frac{1}{2}$  inch appears to be preferred, the necessary driving ability being obtained by multiplying the disks. With all multiple disk clutches a very thin oil is necessary. Spindle oil is generally recommended, but even this may be thinned with kerosene. Excellent results are obtained in some clutches by the use of simple kerosene having a little graphite mixed with it. Other users obtain good results from the dry flake graphite, no oil at all being used but a little of the graphite being shaken into the clutch every day or two. Of course oil can only be dispensed with if the clutch is provided with ball bearings throughout. In this connection it may be mentioned that a slight amount of warp in the clutch plates, such as may appear from wearing away of the tough skin on the surface of a rolled steel plate, is not necessarily objectionable, since it aids the plates to separate and admit oil between them on release. Only a very slight amount of spring of this sort can be permitted, however.

## GRINDING HIGH-SPEED TOOLS

Tools of high speed steel must be ground under a strong stream of water. If they are ground dry and dipped in water to cool them they are almost certain to be burnt and cracked at the cutting edge. A trickle of water will not suffice. A flow of from 1 to 3 gallons per minute is necessary, according to the size of the tool, and a regular water grinder must be used. If the water falls in a large stream at low velocity it will not spatter.

## MOLASSES FOR ANTI-FREEZING

The following, clipped from an English motoring publication, may be of interest to those who live in cold regions and want to do a little experimenting: "Glycerine to the extent of 24 to 30 per cent added to the water in the radiator of a motor car is frequently recommended as a frost preventive, and in such proportion the

radiator and waterjackets are filled with an unfreezable solution. But it is not cheap, and as the water appears to reduce the percentage of glycerine somewhat rapidly additions have to be made with considerable frequency. A correspondent of our contemporary *Omnia* writes that in lieu of glycerine he has during the late cold snap in France added molasses to the water in his radiator with complete success. *Mélasse de sucrerie* is the exact name he gives the substance, but it must be nothing more or less than the good old-fashioned treacle, none of this latter day golden syrup, but the treacle, the black treacle of our very early youth. The particular liquid used contains from 40 to 60 per cent of saccharine, a considerable quantity of potash, and divers salts. Its specific weight is 1.450. It is added to the water intended for the radiator in the proportion of 50 per cent, rendering the water incongealable, while suspended potash prevents any depositing on the surfaces of the radiator or water jackets of the engine."

## LEAKY CARBURETOR FLOAT

A carburetor float suspected of leakage is tested by immersing it in warm water, which will cause the evaporated gasoline or the expanding air within to issue from the leak in small bubbles. If there is gasoline in the float it may be entirely evaporated out in this manner, and the hole soldered up after the float has cooled. In case the leaks cannot be located with the soldering iron, the float may be nickel-plated over all, which will close small porosities better than solder.

## CLEANING THE MAGNETO

That with which to clean a magneto is gasoline. It will not affect the shellac with which the armature winding is coated nor will it injure the hard rubber insulation. The cleaning should be carefully done, using a soft paint brush or an old shaving brush, and the gasoline should be very thoroughly dried out before the magneto is run.

## MILLING A PLANE SURFACE

One way to produce a perfectly plane surface is to feed the work across a face mill. Provided the work travels in a straight line and is well supported, and provided also the spindle of the mill runs true in its bearing, it does not matter whether all the teeth are exactly alike or not. The tooth which cuts the deepest will determine the final surface. Of course it is necessary for the work to travel clear across the mill from side to side, and it is necessary too that its line of movement should be exactly at right angles to the axis of the spindle.





# THE READERS' CLEARING HOUSE



## HOME-MADE STARTER

Chicago—Editor Motor Age—During the past 3 months I have been decidedly interested in the numerous self-starting devices described and illustrated in your columns from week to week and ask for sufficient space in your Clearing House columns to refer to a self-starter of my own invention and manufacture that I have used on my car for three seasons. The illustration shows the device as designed for a four-cylinder car with vertical cylinders, but my experience has been confined to a two-cylinder horizontal motor in which case the operation of the self-starter is identical with that illustrated, but which differs slightly in size and arrangement. My self-starter works on the compressed air principle in which air is stored in a tank on the chassis and this air liberated works a piston which imparts one or more revolutions to the motor crankshaft, thus starting the motor. The circular portion of the diagram represents the flywheel of the motor and the small 6-inch spur pinion with sixty teeth is clutched to the front end of the crankshaft. The starter has a Shelby steel cylinder 10 inches long and 4 inches in diameter placed horizontally at the left front of the crankcase or at the right front, according to the direction of the crankshaft. In the cylinder is a brass piston with leather cramp to hold the compression. Attached to the piston's forward end is a long rack extending the entire length of the cylinder and beyond. The under side of this shaft is provided with a rack of teeth, thirty in all and made to mesh with the pinion on the crankshaft. Above the rack is a dummy wheel to hold the rack down in mesh with the crankshaft pinion. At the opposite end of the cylinder is an entrance for the air, by way of a three-way cock. With the cock in the position shown air is free to enter from the air tank at a pressure of 60 pounds to the square inch and so entering forces the piston through the cylinder and so imparts a turning movement to the crankshaft. When the piston has been thrust to the length of its stroke the gear on the crankshaft stops, due to its clutch mounting on the shaft, but the shaft continues. The starter is operated by a small handle at the side of the seat, a short movement of which is sufficient to open the three-way air valve and let the air pressure into the cylinder. At the end of the piston stroke an automatic arrangement provides for cutting off a portion of the air pressure and at the completion of the stroke the entire air supply is shut off and the air within the cylinder liberated, at which time the coil spring surrounding the piston rod forces the piston back to the starting end of the cylinder.

der. The air pressure for the compressed air tank is taken from the combustion chambers of one of the cylinders, its back flow being restricted by an ordinary check valve. The pressure tank has sufficient capacity for a dozen starts and has held its pressure for 3 days, the motor at the end of this time starting at the first pull of the starter handle. Should the motor not start at the first trial due to faulty ignition or other causes the pressure in the starting tank is sufficient for ten or eleven other trials, and if a start should not be made in these then the ordinary crank would have to be resorted to, but which condition has not as yet arisen. The device complete weighs approximately 35 pounds and occupies but little position in a car.—John O. Hobbs, 1124 South Central avenue.

## ACCELERATOR PEDAL

Brooklyn, Ia.—Editor Motor Age—Please tell me through the columns of the Readers' Clearing House what is an accelerator pedal and if it is used on anything except racing cars. What is a floating rear axle?—L. C.

An accelerator pedal is designed to be operated by the foot and is connected to the throttle on the carburetor. It is usually made so that a spring keeps the throttle shut except when the pedal is pushed down by the foot. In a floating rear axle the axle does not carry the weight of the car, driving it only. The wheel revolves on bearings on an extension of the axle housing and the floating axle is connected to the wheel by means of dental face teeth for driving purposes only. The halves of the axle may be removed without interfering with the wheels other than to take away the driving medium.

## AIR PRESSURE IN TIRES

Lebanon, O.—Editor Motor Age—Please state in the columns of the Readers' Clearing House if there is more pressure in a pneumatic tire when the weight of the car is on it than when the wheel is off the floor and, say, resting on a jack.—Reader.

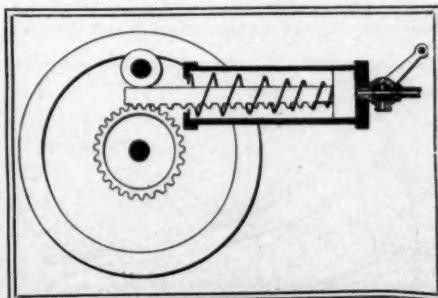
There is, undoubtedly. Suppose, for instance, the tire had been inflated to 65 pounds per square inch without the weight of the car resting on it and suppose the

tire were to be run through rollers in order to compress the air into 20 per cent of the area of the tire—providing it is assumed the tire would withstand this pressure—would not the pressure be greater than if the same amount of air occupied the full area of the tire? The size of the tire, the pressure therein and the weight of the car on the tire would, naturally, be factors in determining the added pressure.

## TANK NEEDS CLEANING

Battle Creek, Mich.—Editor Motor Age—I have a 14-horsepower two-cylinder opposed engine with which I have had considerable trouble in the last 6 months to operate satisfactorily. I have tried every repair shop in this city, but with no success. I had the old carburetor repaired, have tried a new Schebler, have put on a new timer and then went back to the old, have dried out the spark coil, had new valve springs put in, valves reground, engine retimed, wiring all examined, new batteries—in fact, anything that the ordinary motor man could think of to do; yet it will not run satisfactorily. Every time there is a different trouble; I cannot define the way it acts as it never acts twice alike. The only thing I can find out of the way is that the stems of the exhaust valves have been dressed down and cleaned with emery paper several times so that they are quite loose and have considerable play. Would this cause trouble? The machine will run along two or three blocks satisfactorily, will fuss around a couple of blocks, and then start to run like a scared cat. At other times it acts as if not getting gasoline enough, but after adjusting the carburetor it will get too much. I have spent considerable money on the car in the repair shops, allowing the men to do everything they suggested and everything I could think of, and with no avail. Ordinarily there is nothing that goes wrong with the car that I cannot correct myself.—D. N. Taylor.

Sometimes the gasoline in the tank accumulates fluff, either from waste or from the chamois skins through which it is strained, and this fluff gradually accumulates in the outlet from the tank to the gasoline pipe, clogging the latter. If the main gasoline valve is close to the tank it is easy to close this valve, disconnect the pipe, and then see, by opening the valve, whether the gasoline runs out freely. If it does, connect the piping against the tank and disconnect it close to the carburetor and try again. If the gasoline still flows freely open the carburetor and take out the float valve and see whether the gasoline enters freely and overflows the spray nozzle freely. If this does not locate the trouble, describe the symptoms more in detail.



HOBBS' HOME-MADE STARTER

## EXIT THE FAT SPARK

**T**HAT a strong or "fat" spark is better than a weak one, when used to ignite the charge in a motor, appears to be a commonly accepted opinion, while there can be no doubt that in the case of most engines the power developed is considerably greater when the voltage of the ignition battery is well up to its normal value, than when the battery has run down, although the engine continues to fire regularly. Not feeling satisfied as to the cause of the above, and not being able to find the record of any direct experiments, the author has made the measurements recorded below.

The engine employed is a double-cylinder one having a bore of  $3\frac{1}{2}$  inches and a stroke of 4 inches. The inlet valve is mechanically operated, and both valves open into a pocket on one side of the cylinder head. All the experiments were made on one cylinder only, the other cylinder working with the trembler coil ordinarily employed with the ordinary 4-volt battery. The speed at which the engine was run varied between 950 and 1,000 revolutions per minute.

The primary of the coil used to fire the charge was connected to a commutator on the two-to-one shaft, a battery of 10 volts, an adjustable resistance, and an ammeter. The reason why a fat spark improves the working of a gasoline engine may be either the development of a greater pressure in the cylinder owing to the quicker ignition of the charge, or the more regular firing produced by the timing of the spark being more uniform. Experiments using a trembler coil at once showed that when the current in the primary of the coil is reduced, the time of firing is delayed, but on advancing the spark more than usual, the mean pressure during the stroke can be brought back to the value obtained when the usual current is employed. As this indicated that the delay might be caused by the coil, the ordinary wipe contact was replaced by a make-and-break contact, and the trembler coil was replaced by a non-trembler one. As a result the delay, which, with the trembler coil took place when the current in the primary was reduced, no longer took place, this point being illustrated in figures 2 and 3. In each figure—the two diagrams were taken on the same plate, but to prevent confusion the plate was moved to one side between the two exposures so as to separate the traces—the indicator diagram *a* is taken with a strong current in the primary of the coil, and that *b* is taken with such a weak current that any further reduction in strength is followed by entire cessation of firing. It will be observed that the timing and the pressure developed is the same in

**EDITOR'S NOTE.**—Paper read by W. Watson before Automobile Club of Great Britain and Ireland on February 21, 1907.

either case, except that in figure 3 *b* an explosion has been missed, owing to the spark failing to pass, and the next explosion is much more violent than usual, due to the scavenging which took place during the idle stroke. In figure 2 the sparking points were .25 mm. apart, and in figure 3 .5 mm. Diagrams were taken with the sparking points at .25, .5, and 1.0 mm. apart, but as no difference was obtained, only diagrams for a sparking distance of .5 mm. are given in most cases.

In figure 4 is shown the corresponding pair of diagrams when the mixture is very weak, a large excess of air being used. Here again, with the exception of some abnormal strokes following miss-fires, there is no effect produced by reducing the in-

is broken at the wipe contact. The kind of delay which may be produced by lag of the trembler is shown in figure 7 for coil A and in figure 8 for coil B, and it will be seen that although the delay is appreciable the amount is quite regular, so that all the explosions occur at the same point in the stroke, and so the effect of the delay could, in the case of a single coil, be eliminated by slightly advancing the spark.

As the current actuating a trembler coil is gradually reduced there is at first a small lag, such as that shown in figures 7 and 8, due to lag in the trembler, and then there is a sudden great increase in the lag. This increase is due to the trembler ceasing to act, so that the spark, in place of occurring shortly after the primary circuit is completed at the commutator, does not take place till the current is interrupted at the contact. When the current is below the critical value, holding the trembler against the upper stop produces no effect on the

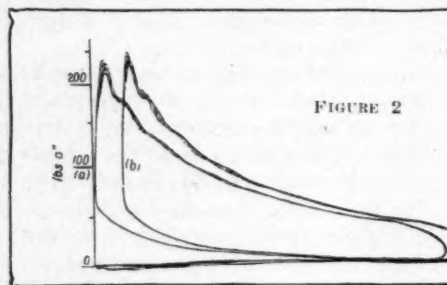


FIGURE 2

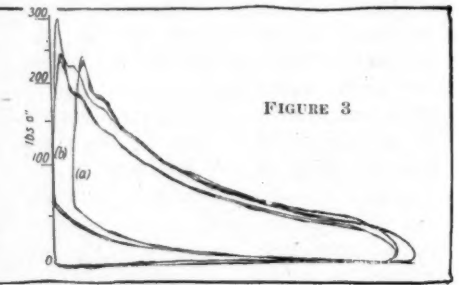


FIGURE 3

tensity of the spark. The above experiments indicate that it is not the weakness or fatness of the spark—at any rate, in my engine—which causes the loss of power which occurs when a trembler coil and a weak current are used. The kind of effect which is obtained with a trembler coil when the current is reduced, the carburetor being adjusted to give the best mixture, which for shortness may be described as a full mixture, is shown in figure 5. In figure 6 the irregularity which may occur when a weak mixture is employed is shown, the diagram obtained with the normal current being omitted for clearness. It will be observed that the maximum pressure occurs at all sorts of points of the stroke between the normal and about four-fifths stroke. The delay which occurs when a weak current is used with a trembler coil may be due to sluggishness of the trembler or to the fact that the trembler fails to act, the spark which ignites the charge being produced when the current in the primary of the coil

timing of the spark, showing that the trembler has really ceased to act. The change in current which at the critical value is required to pass from the state when the trembler acts to that in which it fails is very small, in most cases less than a tenth of an ampere, the absolute value of the current depending on the adjustment of the trembler. Figures 9 and 10 show the diagrams obtained with coils B and C when the current is first just above, and in the second case just below, the critical value. That the size of the spark has no effect on the power developed was further shown by taking a number of indicator cards in which coil B was used, and the current in the primary was adjusted so that *a* the mean current was 0.6 ampere and the equivalent spark length in air was 5.1 mm.—these equivalent spark lengths were obtained by means of an adjustable spark gap fitted with a micrometer screw; the spark took place between a brass point and a brass sphere, and the distance the spark would

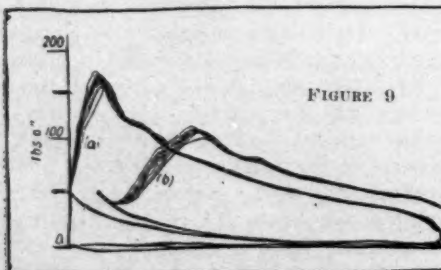


FIGURE 9

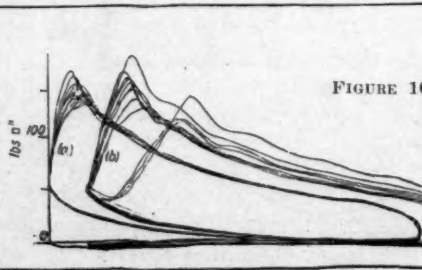


FIGURE 10

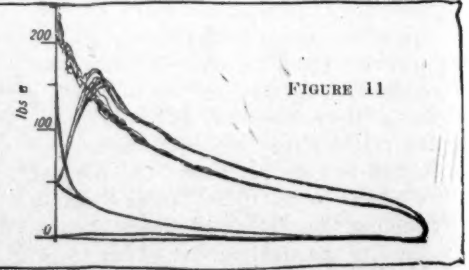


FIGURE 11





FIGURE 6

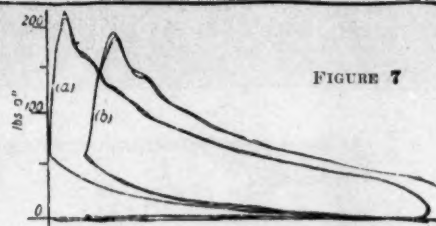


FIGURE 7

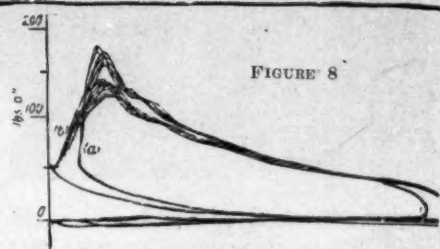


FIGURE 8

jump was appreciably between the brass than what it was between the points of the ordinary sparking plug; thus .3 mm. in the micrometer spark gap in air was equivalent to .5 mm. in the cylinder, the compression in the latter being about 55 pounds per square inch above atmospheric pressure—the trembler of the coil acting, and *b* when the current was reduced to .03 ampere the trembler no longer acting, but the delay caused by the fact that the spark is now produced when the commutator breaks the current being compensated by advancing the spark lever. The equivalent spark length in air was in this case 0.3 mm. The mean indicated horsepower for four cards for each arrangement, taken alternately, was the same within the limits to which the diagrams could be measured; the fact that the speed of the motor was unaltered by the change in spark also indicating that the power developed was the same whether a large or small spark is employed. From the

ure 11. Since the power developed is not improved by the use of a fat spark, there are many advantages in using a coil which only gives a comparatively small spark, so long as the working of the coil is regular, for such a coil can be designed so that it only consumes a small current. The advantages of a small current are that, in addition to the economy in current, the wear on the points where the current is interrupted, due to sparking, can be reduced to a vanishing point. Thus, with a trembler coil the trembler, or with a plain coil the points of the make and break, need seldom be touched. By suitably designing the coil and the commutator absolutely regular firing can be produced when the mean current does not exceed a tenth of an ampere. To show that a fat spark, and hence a large current consumption, does not necessarily imply a good coil, a comparison was made between coils B and C, coil B being that which gave the fattest spark, and C that which gave

2. With a trembler coil the time at which the spark occurs is liable to vary greatly, and on this account the power developed may be considerably reduced.

3. The variation in the time of firing obtained with trembler coils is different for different coils, and hence a multi-cylinder engine in which a separate coil is used for each cylinder is unlikely to develop its maximum power, particularly at high speeds; the reason being that although the tremblers of the coils may possibly be so adjusted for some particular voltage that each cylinder fires at the same point of the stroke, yet this adjustment will no longer be true if the voltage of the battery alters, particularly if it falls much below the value for which the tremblers were adjusted.

4. When a single coil is used in combination with a high-tension distributor the current in the primary should never be allowed to fall to a value near what has been called above the critical value for the particular coil. In this connection it may be mentioned that, in the author's experience, when the trembler is so adjusted for any given voltage of the battery, namely, for a given current, that the note produced is very clear and "pure," then a very slight decrease in current, due to a small fall in the voltage of the battery, will cause the timing to be defective, owing to the region of the critical current being approached. Hence, with the normal current passing—namely, with the battery fully charged—it is advisable to adjust the trembler so as to give a somewhat harsh and shrill sound, for then the current may be considerably reduced before the critical value is reached.

5. When selecting a coil, regularity in the working of the trembler for considerable variation in the current passing in the primary is of more importance than length or fatness of spark. Further, a coil taking a small current is to be preferred to one taking a large current, since trouble with the adjustment of the trembler blade will be decreased, owing to the reduced sparking at the platinum points with a small current.

6. Except for the fact that the engine cannot be started on the switch, the plain coil with a rapid break on the two-to-one shaft seems preferable to a trembler coil, since over a very large range of current—in fact, whenever the current is large enough to cause the passage of a spark in the cylinder—the timing is exactly the same. The advantage of the trembler might be retained by using a switch, so that after the engine is started the trembler can be cut out, allowing the coil to act as a plain coil, a second condenser being provided.

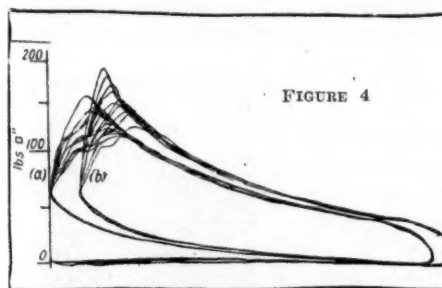


FIGURE 4

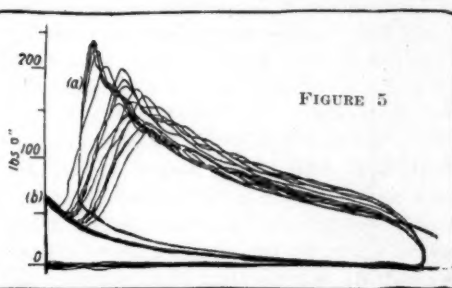


FIGURE 5

results of the above measurements it would appear that the trembler, although it undoubtedly is an advantage when starting, is apt to introduce very considerable variations in the point of the stroke at which the charge is fired. Hence, on this account a plain coil with a make and break is to be preferred, particularly in the case of multi-cylinder engines having separate coils for each cylinder. The ill effects of the trembler will also be felt when a single coil with a high-tension distributor is used unless care is taken to keep the electromotive force of the battery well above the value required to give the critical current below which the trembler ceases to act. There is one disadvantage in the make and break, besides that due to the loss of power of starting on the switch, namely, that with some forms, unless the adjustment is just right, the blade may act as a trembler, giving a spark before the cam on the engine shaft finally breaks the circuit, so that pre-ignition is produced. This effect is shown in fig-

the thinnest of the three coils tested. The two coils were so arranged that by means of two switches either coil could be used at will, and the current was adjusted in each case to the smallest value at which the coil would give regular firing. The results of the comparison are shown in figures 12 and 13. Figure 12 shows the diagrams obtained with a full mixture, and figure 13 those obtained with a weak mixture. In either figure diagram *a* is that obtained with coil B, the mean current being .6 ampere, while diagram *b* is that obtained with coil C, the mean current being .15 ampere. It will be noticed that coil C fires more quickly than coil B, probably owing partly to having a lighter trembler, and partly to the fact that its time constant is smaller.

The conclusions to be drawn from the above experiments appear to be as follows:

1. As far as a gasoline engine of the type used is concerned, the character of the spark which ignites the charge has no appreciable influence on the power developed.

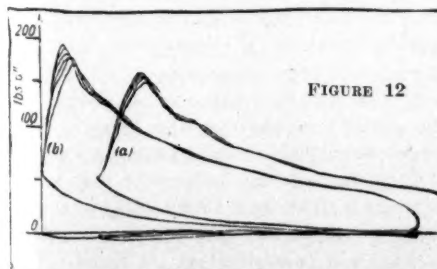


FIGURE 12



FIGURE 13

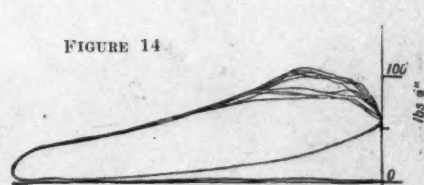
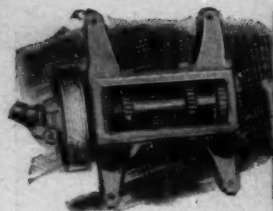


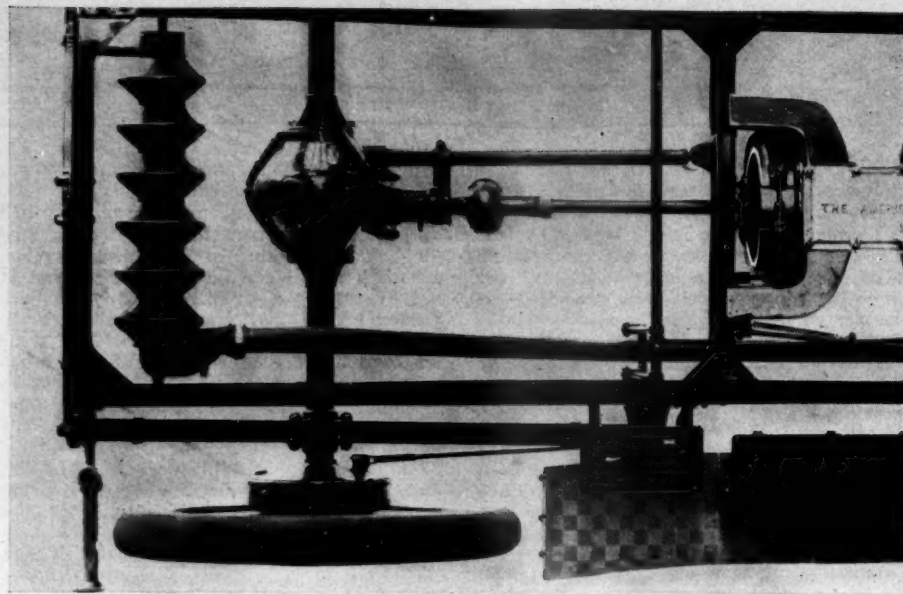
FIGURE 14



## TOR CAR DEVELOPMENT



TWO distinct models of American cars are manufactured this season—one the American roadster with frame slung beneath the axles and the other the American five-passenger tourist with frame carried above the axles. In both cars the same principles of design rule, but in many instances the details are accomplished quite differently, making the two cars distinct in other respects than body lines. The roadster is made with 106-inch wheelbase, the tourist has a 116-inch base; in the roadster the steering knuckles are on the spindles carrying the wheels in the tourist they are on the ends of the axle; the crankcase of the motor in the roadster has a pair of lateral arms at each side for carrying it on the superframe, in the tourist the crankcase is webbed between these arms so that it fills the entire space between the frame side pieces, thereby eliminating the necessity of a mud apron; the change speed gearbox in the roadster has two lateral arms at each side for supporting it on the superframe, the tourist has a pair of peculiarly curved arms on each side, the two at the front curving forward to rest on a crosspiece of the frame and the rear pair curving backward so as to repose on another crosspiece; the frame of the tourist has a double offset, one where the side pieces are incurved 1 inch alongside of the motor and again where they are upswept  $2\frac{1}{2}$  inches in front of the back axle, while with the roadster the insweep alongside of the motor appears but that in front of the back axle is lacking; the tubular radiator of the roadster is considerably deeper vertically than is that of the tourist but both are carried behind the vertical line of the front axle; against the 2,200-pound weight of the roadster is that of the tourist's 2,600

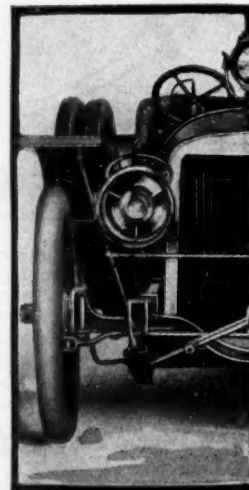


AMERICAN TOURIST CHASSIS SHOWING GEARBOX ARMS

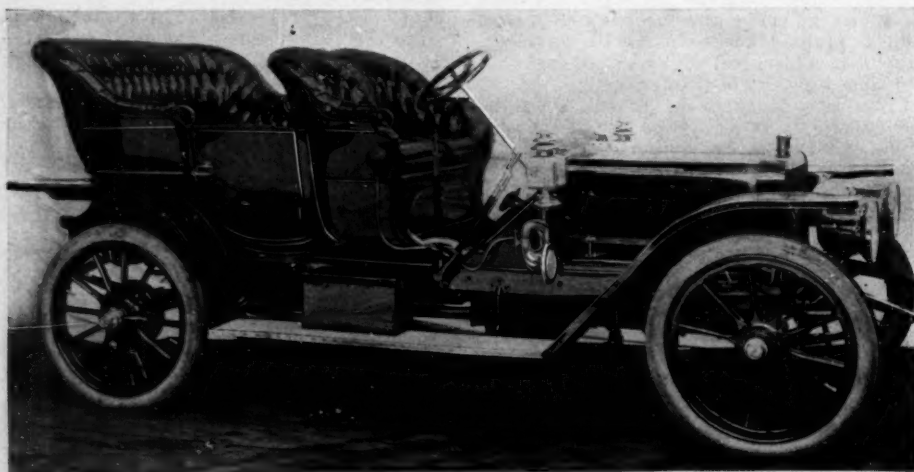
pounds; the roadster has gasoline capacity of 22 gallons in a large tank supported between the frame pieces in rear of the back axle, while the tourist's fuel capacity, confined to 17 gallons, is placed beneath the front seat; the front tires are  $3\frac{1}{2}$  inches on the roadster, but 4 inches on the tourist, both using 36-inch wheels in front and rear and employing 4-inch pneumatics regularly on the back wheels. This enumeration of differences and contrasts between the models could be continued but this suffices to show the varying details in the two models. The principles in use in the two are, however, alike.

Employed in both models is a 40-50-horsepower 5 by 5-inch motor fashioned on Continental lines with cylinders in pairs and valves in side chambers on the right, intakes and exhausts side by side and opened from a single camshaft. The cylinder pairs are mounted on the top half of the crankcase on which portion are carried

the three bearings of the crankshaft as well as those supporting the camshaft. This leaves the bottom of the case for an oil basin. To insure an equal distribution of lubricant to the front and rear cylinder pair this pan has a transverse partition between the cylinder pairs. At the forward end of the crankcase is a housing enclosing the crankshaft pinion, half-time gear for the camshaft and a gear on the



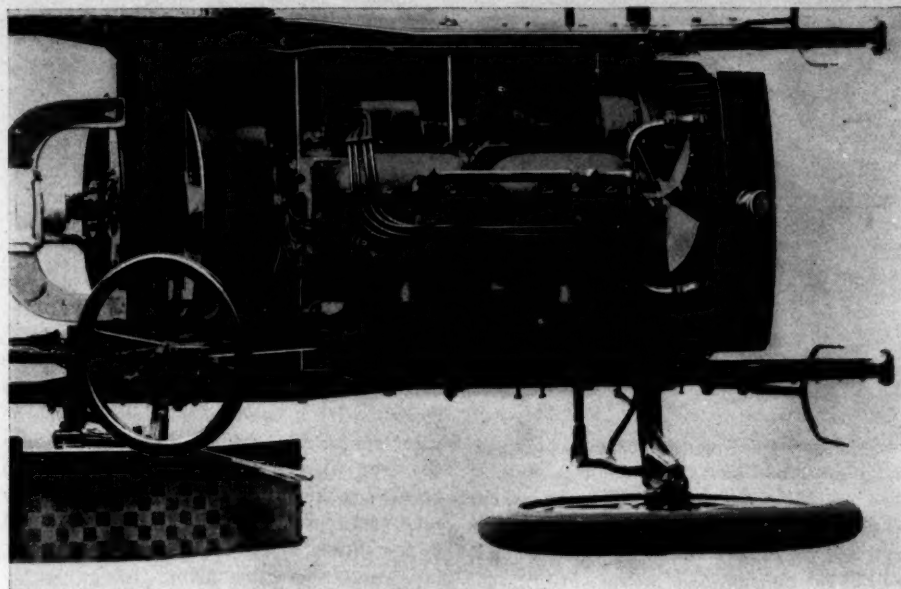
left side which drives a shaft coupled with the water pump and magneto. In the course of construction the cylinder walls, after machining, are subjected to an annealing process to fit them to withstand high temperatures after which they are rebored and fitted by hand to an accuracy within 1-1,000 inch. The valve action follows the Continental practice of interposing a horizontal lever with an end roller between the cam and bottom of the lifter rod for opening each valve. This lever is hinged at one end to the crankcase and on its opposite end carries a roller which rests upon the cam. The body of the lever is continued above this roller, forming a support for the foot on the bottom of the valve lifter rod. The cam action is against the roller on the lever. The lift on the valve opening rod is vertical at all times. The



AMERICAN TOURIST 40-50-HORSEPOWER CAR

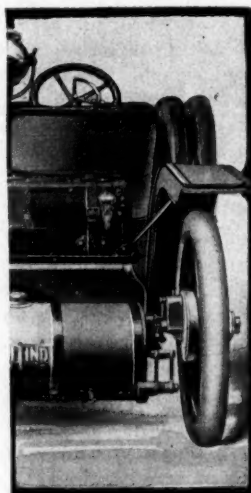


# TWO AMERICAN MODELS



THE AMERICAN TOURIST CHASSIS WITH 40-50-HORSEPOWER MOTOR

ignition is a dual system—one magneto, the other battery—and this system is different in the roadster and tourist. In



the roadster the Simms-Bosch magneto is carried on the motor arm at the left rear and current therefrom is passed to a set of plugs carried over the intake valves. The other system, with current from a battery, passes this current through a single-unit coil and distributes

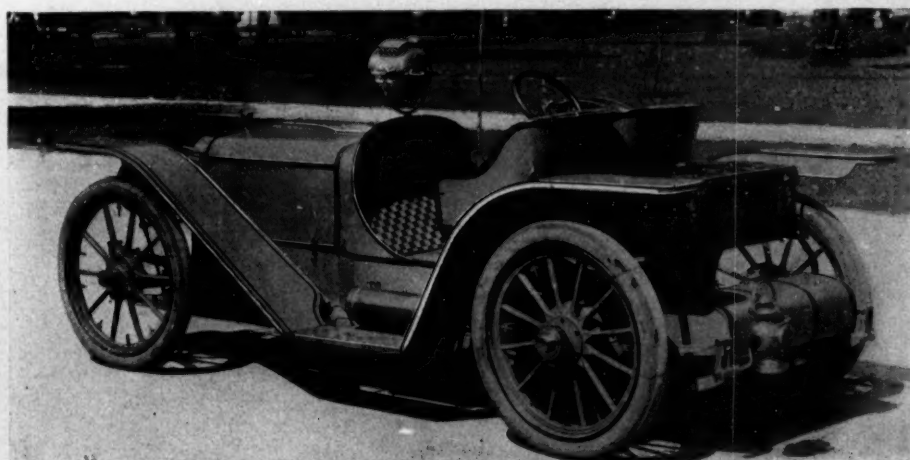
it to the plugs through the magneto. In the tourist car the magneto system is identical with that in the roadster, but in its battery system a four-unit coil and timer carried on a vertical shaft on the right between the cylinder pairs are in use. The battery current is directed to a set of plugs located in the caps over the exhaust valves. Control of the spark in both systems is from a leverette carried above the steering wheel.

In the roadster the gasoline is forced by air pressure from the tank on the rear of the chassis to a running tank with float on the dash by means of an air pump carried in front of the seat. From the dash tank the fuel feeds by gravity to the Schebler carbureter. The tourist uses gravity feed direct from the tank under the front seat and so dispenses with the air tank and

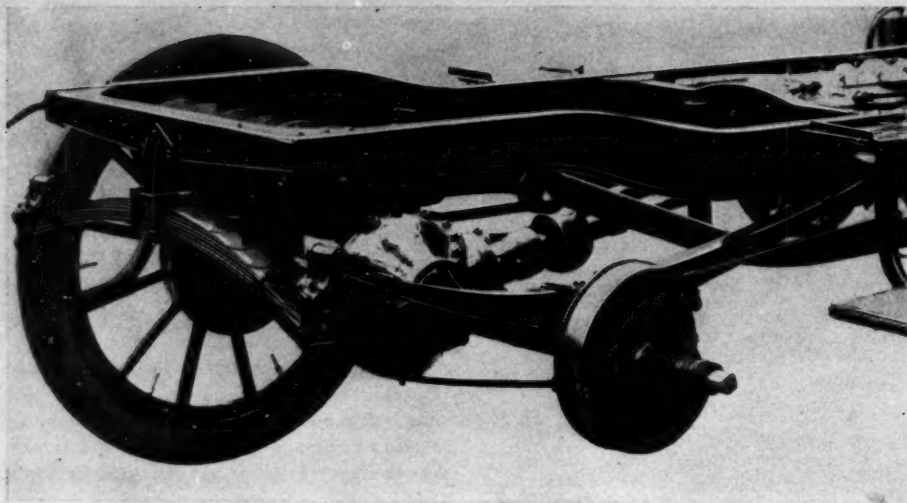
supplementary fuel tank with its float on the dash. In the lubrication of both slight differences appear, both entrusting the forcing of the lubricant to a mechanical oiler carried on the dash. Of its six leads four pass directly to the cylinder, a fifth goes to the forward portion of the engine and the sixth communicates with the rear system of the car. The roadster in addition has a hand pump for injecting oil into the crankcase direct. In cooling the motor a typical water system has been installed with circulation compelled by a water pump and air circulation assured by the joint efforts of a fan in rear of the radiator and fan blades in the flywheel and also in the cone portion of the clutch. Out of the ordinary is branching the return water pipe from the tops of the jacket pairs, one branch uniting with the water tank space in the top of the radiator at the right and the other uniting with it on the left side. The radiator is a series of

vertical tubes of good depth from front to rear, but narrow transversely. These tubes unite with upper and lower water tanks and are separated by zigzag metal plates for radiating the heat.

Both roadster and tourist employ cone clutches with the male portion faced with mineral tanned leather, beneath which is a series of springs to ease engagement. Between the clutch and gearbox is a universal joint. The gearbox in both models is an aluminum housing with the top a large inspection plate. Main and countershafts are in the same vertical plane, the mainshaft beneath. Gears used are nickel-steel forgings and direct drive on the high speed is through an internal gear. The three forward variations are obtained on the progressive principle, it being necessary to go through the intermediate in passing from low to high. In the rear of the case is an integral apron formed as a continuation of the base of the gearcase which protects the running brake carried on the driveshaft immediately in the rear of the case. The propellershaft has a double set of universals, one in front and the other at the rear. The back axle, like the front of standard construction, is of the floating type with the driveshafts supported on ball bearings of the cup and cone style. On the rear wheels is a set of expanding brakes, operated by side lever and the application of which disengages the clutch. The expanding member is a bronze shoe which acts directly on the steel drum. The running brake in the rear of the gearbox is a bronze-lined band acting upon a steel drum, but its application has not any effect on the clutch. Supporting the driveshaft to the back axle is a torsion rod. The forward axle is an I-beam forging of nickel steel formed without recourse to a central weld. It is conventionally downwardly



AMERICAN ROADSTER WITH UNDERSLUNG FRAME



UPSWEPT FRAME IN AMERICAN TOURIST CAR

arched for the protection of the flywheel.

In an examination of the frame and spring construction of the running gear special attention is directed to the roadster, as it is the one American car built for regular road service that has an underslung frame. In the days of circular track racing underslung frames were common, but makers in general have remained away from them for touring vehicles. In the American roadster a particularly neat effect has been achieved by undersliding the frame which lowers the driver's seat fully 9 inches more than is customary with touring cars with 34-inch wheels, while the American roadster has 36-inch wheels. The exact measurements show that while the frame is lower and the body with load practically 9 inches lower, yet the motor and gearbox are not lower than in many other machines. This is due to the fact that the American has a road clearance of  $10\frac{1}{4}$  inches beneath the flywheel. Clearance beneath the flywheel is the limit of suspension in all cars whether the frame is above or beneath the axles and so the American could not set a specially low mark in this regard but the effect accomplished by lowering the weight of the two passengers, the weight of the entire body and the weight of the car frame has much to do in lowering the center of gravity of the complete car. The side pieces of the frame are made with a vertical depth amidships of 5 inches and with lips  $1\frac{3}{4}$  inch wide. The stock is  $\frac{3}{16}$ . At the forward end these members are upturned and connect through long links with the ends of the front spring, but carry pedestals to which the rear ends of these springs are bolted. The same attachment to the frame holds good with reference to the back pair. The front pair of springs is 42 inches long and the back pair 6 inches longer. The forward pair rests on the axle, the back pair is clipped beneath the axle. The company claims considerable merit for this underslung system chiefly in that the rebound, which breaks springs, is eliminated. Should the front wheels fall into a deep hole the springs

straighten out and the frame sinks toward the ground but on the rebound it cannot raise much, owing to rubber bumpers on the frame which strike beneath the front axle and so what would be the rebound results in the upward movement of the frame striking the axle through these bumpers, tending to raise the axle from the ground. This striking of the bumper upon the frame saves the leaves of the spring from the effect of the rebound. In the tourist car the springs are all carried above the axles and although a pair of front semi-elliptics is used the rear system is a platform system with the cross member to the rear almost beneath the back crosspiece of the frame and secured to a dropped bracket from the frame. In the tourist the mainframe is a simple affair—a pair of side members with double offset as already mentioned and three crosspieces, one forming the back end and the other two supporting the gearbox. In the roadster a superframe is needed, it being the ordinary subframe carried higher than the side piece of the mainframe and supported on arched crosspieces. On this subframe are carried the motor and gearbox. Where the frame in the tourist is offset beside the dash the lips of the side frame pieces are

increased and the offset is well tapered, but in the roadster the widened lips are wanting and the offset is more abrupt; the idea being that the subframe takes the main strain off the motor and gearbox, while in the tourist these are direct on the side pieces. The American Motor Car Co., Indianapolis, Ind., manufactures both of these touring machines.

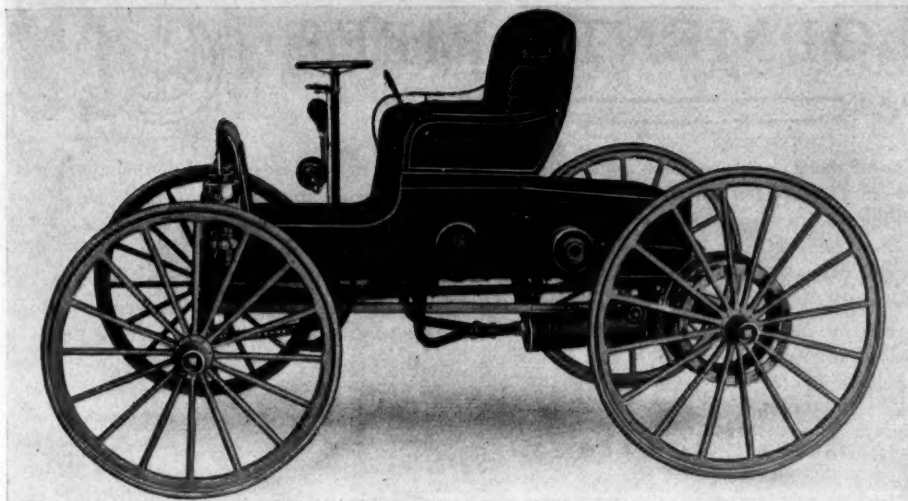
#### HATFIELD RUNABOUT

Manufactured by the Hatfield Motor Vehicle Co., Cortland, N. Y., the Hatfield buggyabout comes as one of the light, cheap and simple vehicles of the year. It is a "motored" buggy—in short a buggy with buggy axles, buggy wheels, buggy tires, end buggy springs and buggy body, but carrying such unmistakable evidences of motor power as vertical steering column with a hand wheel rising from the right center of the footboard, sprockets on the rear wheels with short side chains to other sprockets at the side of the body in rear of the seat, a cylindrical muffler and a few other additional like side lamps, horn and operating lever. Simplicity is the keystone of this two-cylinder 12-horsepower friction-driven four-cycle machine. A glance at the illustration showing the motor and friction members as located in the body assures the reader of this. There is the opposed two-cylinder motor located transversely, with the ends of the cylinders resting on the 2 by 3-inch oak sills forming the side members of the frame. In the rear of this is the large friction disk 14 inches in diameter covered with a metal known as Alzin. A little further to the rear is the only shaft in the car—a  $1\frac{1}{8}$ -inch Shelby seamless steel tube carried on roller bearings. Splined on it is a 14-inch friction wheel with a flat paper tire for contact with the face of the friction disk. From the ends of this cross-shaft side chains associate with 17-inch sprockets on the back road wheels. This is the sum total of the car save the essentials that go with the motor and which consist of a float feed carbureter with a source of supply in an 8-gallon tank carried beneath the seat;



MOTOR USED IN AMERICAN ROADSTER CAR





HATFIELD FRICTION-DRIVEN RUNABOUT WITHOUT TOP

a jump spark ignition system combining dry cells, coil, roller timer, steering wheel control of spark and standard plugs and a large gravity oiler over each cylinder and others for each of the crankshaft bearings. Cooling is by circular integral flanges for the cylinder walls and radiating flanges for the heads. In front of the friction disk is a "floating rest"—a large-diameter ball end thrust to counteract the forward thrust on the disk and crankshaft when the friction wheel is pressed against the face of the disk. For variations in speed the friction wheel is moved through the mediary of a side lever along its shaft and across the face of the disk; for frictional contact the cross-shaft is swung forward by pedal and retained by ratchet. A differential is not used on this shaft but an equivalent is substituted. On the brake drums on the cross-shaft is a differentially-acting reverse ratchet device consisting of reverse ratchets and dogs inside the brake drums which are actuated by the shaft upon which they are mounted, one dog always being in contact with one ratchet. When the friction drive is forward one set of ratchets on each end of the cross-shaft drives the sprocket wheels in one direction; with a reversal in the drive that ratchets drive in the opposite direction, giving a differential effect. Steering is peculiar. Attached to the rear side of the front axle is a large semi-circle connecting with the axles near its ends. Attached to this semi-circle is a linked chain. On the base of the steering pillar is a sprocket in mesh with the chain. When the chain stretches arrangements are made to tighten it. Front and rear axles are 1½-inch steel reinforced with wood—buggy fashion. Front wheels are 36 inches and rear wheels 40 inches in diameter, both carrying 1¼-inch cushion tires. Springs in front and rear are 38 and 42-inch elliptics respectively and Timken rollers carry the road wheels. The machine weighs 800 pounds, has an accredited speed range of from 1 to 25 miles per hour, a 74-inch wheelbase and accommodates two passengers. The body is a neat piano box design

with good rear carrying space, and if desired folding top with front and side storm curtains. All told it is well suited for purchasers looking for a cheap machine.

#### SPECIALTIES MADE BY GILBERT

The Gilbert Mfg. Co., New Haven, Conn., besides continuing its general line of tire covers and lamp covers, offers a few other interesting accessories for motor cars. Of these one is the tire sleeve adapted for use in case of a bad blowout in the outer casing. A patch is furnished with this sleeve and which is supposed to be placed on the inside of the shoe. The sleeve is made with or without non-skid rivets and is laced in place in the usual manner. A second specialty is the double spare tire retainers adapted for carrying two extra tires on the running board of the car. These are in two styles, one consisting of a small bracket to be bolted on the running board and having two semi-circular rests for receiving the tires as well as cross straps for holding the tire in place and the others are supposed to be attached one to the dash and the other to the end of the front seat by means of which the tires are held in place. The company also has a spark plug case furnishing accommodation

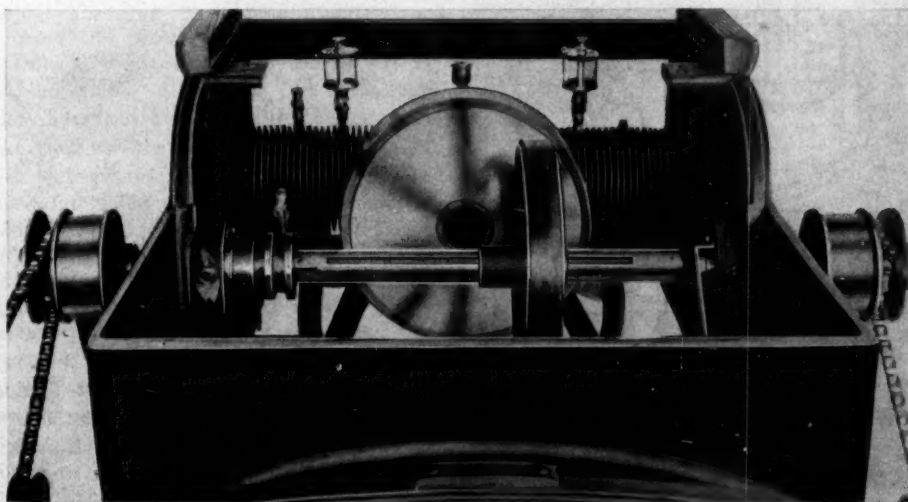
for half a dozen standard plugs. It is made of enameled duck or fabric leather and has a separate stall for each plug. The case is intended to roll up similar to the ordinary tool kit. Of the remaining features one is a holder for the starting handle and consists of a leather socket piece for receiving the starting handle and the other a looped strap for attachment to the frame. The other is a cover slip intended for folding tops when down at which time it not only encloses the entire top but has a flap falling over a portion of the back of the seat and protecting it.

#### MOTOR CAR LITERATURE

The setting for the Jewel is found in a green-covered catalogue in which the Forest City Motor Car Co., Massillon, O., describes the little runabout which it manufactures. Views of the model E stanhope and the chassis of the Jewel are also shown and in the back part of the book are many letters from satisfied users of the little runabout.

In a dignified way the Adams Co., which makes the Adams-Farwell in Dubuque, Ia., turns out a business-like catalogue in which, after giving specifications of the car, it asks and answers many questions of interest regarding its product. This department of the catalogue is full of meat and contains plenty of information on the manufacture of the Adams-Farwell.

Logan commercial cars for 1907 are the subject of one of the best commercial catalogues yet issued. The booklet is in large size, 7 by 10 inches, and contains thirty pages. Besides printing four illustrations of each model, a thorough analysis of the chassis, motor and other parts of each model is shown. Included also is a description of the carbureter, oiler, muffler, transmission and, in fact, everything relative to the car. Beneath each illustration detailed specifications of each model are given. In all sixty-two illustrations are used. From an artistic standpoint the booklet is deserving of credit due to the commendable grouping of the illustrations as well as the selection of type.



POWER PLANT OF HATFIELD FRICTION RUNABOUT

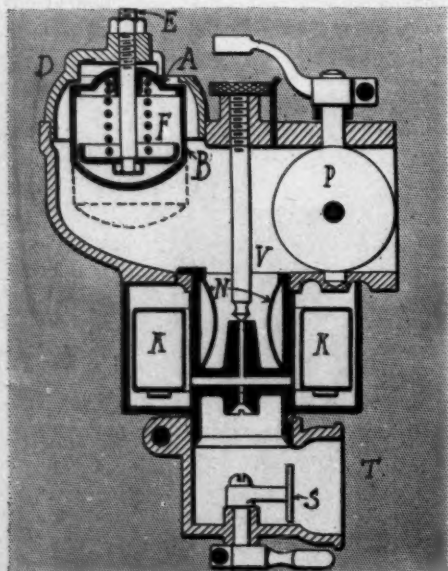


## DEVELOPMENT BRIEFS



### LAVIGNE MULTIPLE OILER

The Lavigne Mfg. Co., Detroit, Mich., in its 1907 Lavigne multiple-feed oiler makes use of neither springs nor check valves. A vertical end section of the oiler shows its method of operation. The rectangular casing is the oil reservoir with a filling cap at X and thimble-like strainer beneath it. The device shows the operation of one pump, but the movement of all four is identical. The oil leaves through the pipe W. M is the top of a vertical plunger or piston which is raised and lowered and by looking at its bottom the lower part of the cylinder in which it reciprocates appears. This piston has a diameter of  $\frac{1}{4}$  inch and a useful stroke of  $\frac{1}{8}$  inch. K is a cone piece which rotates backward and forward and opens and closes ports so that on the upstroke of the plunger M oil enters the cylinder beneath it and on the down stroke K rotates, closing the port into the oil reservoir. Thus the oil is forced up the angular tube and out through the lead W. An explanation follows stating how the plunger M is raised and lowered and also how cone K is rotated backward and forward. The oiler is driven through a shaft A rotated by belt or other means from the motor, this shaft being intended to operate at 500 revolutions per minute. It passes through a stuffing box C in the oiler and carries on its inner end a worm which drives the spur gear B. On this gear is a stud, not shown, that through a short connecting rod raises and lowers the crosshead N and so raises and lowers all of the plungers M for sucking in and forcing out oil. The cone K is rotated from right to left by means of two cam faces, both on the shaft carrying the wheel B. In the illustration one cam rotates K to the right or back and the other left or forward.



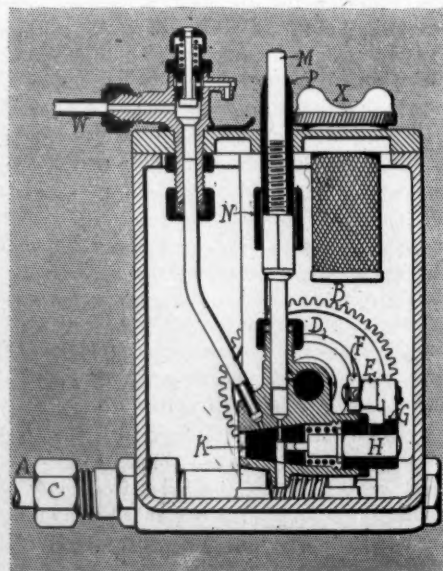
BREEZE 1907 CARBURETER

These cams operate the rocker bar E which is mounted on short rocker arm G which at its lower end is pivoted to the collar pin H and through which the cone K is rotated. Thus by the cam bearing upon the roller F the rocker arm G is given a pendulum movement and so rocks the cone K. A micrometer sleeve P can be raised or lowered to vary the quantity of oil pumped at each stroke of the plunger.

### CARBURETER IMPROVEMENTS

In the 1907 Breeze carbureter several innovations appear, the chief being a peculiar style of auxiliary air valve designed to eliminate fluttering between the piston strokes of the motor. The design of this valve appears in the left top of the vertical section of the carbureter. It is a cylinder B with the coned head A forming the valve proper. The lower end of the cylinder is rounded. The valve is carried on a valve dome D received in an opening in the carbureter top and fitted with a central support for the guide rod E on which the valve works. On the lower end of this guide rod is a piston F and between the piston and top of a valve is a coil spring surrounding the guide rod. The peculiar action of the valve which prevents fluttering is that the air within the valve cylinder has to pass from above the piston to beneath it at a fixed rate, dependent upon the annular space between the piston and the inside of the cylinder. The tension of the valve is dependent on the spring surrounding the guide rod and which tension can be varied at will by the lock nut on the upper end of this rod. The dotted line beneath the valve cylinder indicates the wide open position and at which time the piston will be well towards the top of the cylinder with the majority of the air in the cylinder beneath it. Then before the valve can close the air beneath it has to pass above it, which passage gives to the valve a steady non-fluttering movement. Another particularly new feature in the carbureter is the starting shutter marked S and seen in the elbow of the air entrance T at the base of the carbureter. This shutter connects by wire to the front of the radiator, so that in starting the motor the shutter can be pulled into the position shown, when it practically obstructs the air inlet, thus causing an increased suction on the gasoline flow and giving a very rich mixture. Immediately the motor is started a spring not seen in the illustration draws the shutter S out of position, leaving the air inlet port T wide open. Still another feature about the new carbureter is the needle valve V threaded into the top of the carbureter casing and provided with an adjustable wheel with serrated circumference, which can be

locked in any position by the short vertical spring seen to the right of it and which spring enters the serrations of the wheel. The lower end of this needle valve enters the top of the standpipe in the base of a mixing chamber through which gasoline enters. The point of the valve is a sharp point with cone contour and immediately above this cone portion is a sharp edged flange with a concaved part above it. This flange causes the gasoline to enter the air at right angles, or horizontally, thereby insuring a better mixture, so the maker claims, than where the gasoline is directed upwards at an acute angle. Still another point in the 1907 Breeze is that the car may be started with the throttle almost closed, thereby preventing unnecessary racing of the engine while the operator is walking from the starting crank to the seat. In general design the Breeze carbureter offers nothing radical, being a disciple of that concentric float type in which the spray nozzle is in the center of the spun copper float K. The mechanism for regulating the gasoline entrance into the float chamber is not shown. Air enters through a central base opening by way of short elbow T, with which connections can be had with the exhaust manifold. In the space surrounding the needle valve point is a sleeve N with restricted central diameter which causes the inrushing air to converge at the point of the needle valve and allows it to diverge before entering the mixing chamber. The throttle valve P is of the standard butterfly type and is so located that the auxiliary air has no suction effect on the gasoline entering the needle valve. The entire carbureter casing is well finished and all parts are carefully planned and put together.

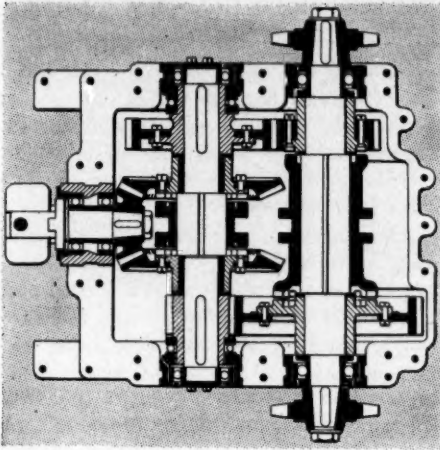


SECTION OF LAVIGNE OILER





# CURRENT MOTOR CAR PATENTS



CLUTCH TRANSMISSION SET

**Carburetor Valve**—No. 846,903, dated March 12; to F. A. Bradbeer, Detroit, Mich.—The carburetor illustrated has the float chamber at the side and a vertical air opening at the base, above which is a regular mixing chamber. The entrance from this mixing chamber to the engine is shown by a light circle in the center of the mixing chamber. The feature of the patent consists in the use of a valve located between the exit to the motor and the mixing chamber. This valve is in the form of a disk plate and is so arranged that in case of back pressure from the motor the valve immediately closes. It is designed to resist back pressure of this nature from the motor.

**Spring Rim**—No. 847,245, dated March 12; to P. E. Dawson, Hancock, Ind.—The wheel referred to in this patent has two rims, the inner one receiving the outer ends of the spokes and the other rim concentric with this but separated therefrom by a series of radially disposed spiral springs alternated with the spokes. The outer ends of these springs are attached pivotally to the center of a curved lever or arm, one end of which is hinged to the inside of the outer rim. These curved arms overlap one another so when stress is placed upon one of the radial springs it is transferred to the adjacent springs.

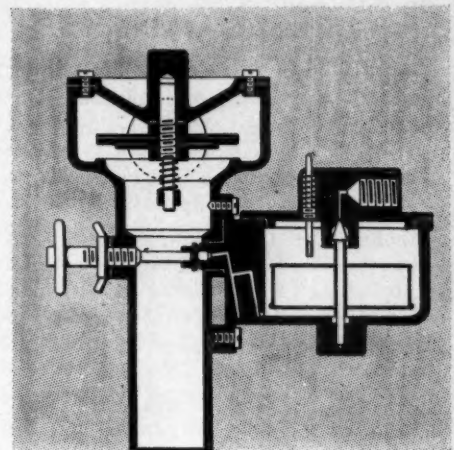
**Change Speed Gearset**—No. 847,048, dated March 12; to A. H. Ehle, Philadelphia, Pa.—This gearset is of the combination bevel and spur type. In the illustration the rear end of the propeller shaft from the motor carries a small bevel pinion shown constantly in mesh with a pair of bevel gears on a cross-shaft, these bevels being loosely mounted on the shaft but attachable thereto through a sliding sleeve coupling operating on a squared portion of the shaft between them. On each end of this cross-shaft is a spur pinion, one large and the other small. Be-

hind this shaft is another cross-shaft or jackshaft, with sprockets on its ends for drive to the back axle. This shaft has a pair of spur gears in mesh with those on the intermediate shaft, these gears being mounted loosely on the shaft but attachable thereto through the medium of a sliding sleeve operating on the squared portion of the shaft between them. The gearset affords two variations of speed; the forward speed is obtained by locking the left bevel to the intermediate shaft and the reverse by locking the right bevel to the shaft by clutch mechanism.

**Buffer Frame**—No. 846,599, dated March 12; to A. Nicholson and I. T. Rude, Chicago.—This frame is a dual one; the main portion is a rectangular construction for supporting the motor and body of the vehicle; the buffer frame is also of rectangular shape but slightly longer and wider than the main frame and connected with the main frame through a set of three spiral springs in front and three in rear. These spirals are placed between the ends of the main frame and the ends of the buffer frame. Should the front of the buffer frame strike any obstruction this jar is absorbed through the front and rear set of spirals and at which time the buffer frame slides to the rear with reference to the main frame.

**Spring Wheel**—No. 847,099, dated March 12; to E. A. Nelson, Chicago, Ill.—This wheel is made without spokes and the entire space between the hub and the rim is taken up with three series of spring rings. Attached to the hub is a set of seven small-diameter spring rings, the rings being secured to one another where they come in contact. Secured to the inner side of the rim are fourteen spring rings, seven of large diameter and alternated with seven others of slightly over half this diameter. Separating this series of rings with that series attached to the hub is an intermediate set of seven of such diameter that each ring contacts with two attached to the hub and three attached to the inside of the rim.

**Filled tire**—No. 884,201, February 12; to H. L. Slager, Springfield, O.—This tire has a regular outer casing composed of rubber and fabric layers and held to the wheel rim by a clamping ring lying within the dips of the tire and drawn against the wheel rim by a series of bolts passing through the rim. The core of the tire is composed of a vulcanized resilient rubber compound of very low wearing qualities whereas the tire casing is of high wearing qualities. To increase the resiliency of the central core which takes the place of the air chamber in a pneumatic, a couple of air spaces extending throughout the entire



DISK CHECK VALVE

length of the core are made use of, these spaces being filled continuously with air at atmospheric pressure and located in the center line of the tire, one close to the tread.

**Motor Plow**—No. 12,575, dated December 11, to S. E. Kurtz, Odebolt, Iowa.—Carried on a metal framework is a gasoline motor geared by chain or otherwise to a cultivating tool in the form of a disk wheel which besides cultivating the soil propels the vehicle. This cultivating disk is set at an angle to the line of direction in which the plow moves, so that while pulling the plow it also turns the soil. Arrangements are made to provide against lateral movement of the plow framework while in operation.

**Wire Rubber Tire**—No. 846,455, dated March 12; to Z. A. Curtis, Channing, Tex.—This tire is comprised of three parts, a base portion carried on the wheel rim, a spiral spring outside of this and taking the place of the air tube in a pneumatic tire and a metal cover or sheath enclosing the spring and occupying the same position in the tire as does the outer casing or tire shoe of a pneumatic. The base part may be composed of any resilient material. The spiral spring is made in a series of parts, the ends of each spiral being embedded in the base of the tire.

**Engine Lubricator**—No. 846,967, dated March 12; to J. H. Wesson, Springfield, Mass.—In the base of the crankcase is an oil reservoir. The oil pump for directing oil to the piston and cylinder walls is carried in the piston and consists of a long tube with the piston reaching into the oil reservoir in the base of the case. With each stroke of the large piston the oil pump is operated and the predetermined amount of oil taken from the reservoir and delivered to the piston and cylinder walls from which it drips back into the crankcase splash.



## AMONG THE MAKERS AND DEALERS



**Cartercar Moves**—The Cartercar Co., of New York, has moved to 7 West Sixtieth street.

**Takes on the Ford**—The Chase Motor Truck Co., of Syracuse, has taken the Ford agency. This company is building a truck to be placed on the market in 1908 and has the experimental rig about ready to run.

**Another for Quakertown**—Philadelphia has another new tire and supply house, J. H. McCullough & Son having secured quarters at 219 North Broad street for the purpose of handling all makes of tires, sundries and supplies.

**Matheson Increases Space**—A large addition to its headquarters has been secured by the Matheson Co., of New York, from the Automobile Arcade adjoining, which is being converted into a machine shop and equipment department.

**Dragon's Output Increased**—John K. Mills, president of the Dragon Automobile Co., told a Motor Age man that beginning last week the Philadelphia factory output had been raised to two cars per day and be double that before the close of March.

**Auctioneers Locate**—The Automobile Auction Co. has been incorporated in New York. It has leased the entire building now occupied by the Fiss, Doerr & Carroll Co. at 41-43 West Sixty-third street, where it proposes to conduct weekly auction sales of motor cars.

**Buick People Busy**—The two large Buick factories at Flint are devoted entirely to the manufacture of two-cylinder models, while at Jackson four-cylinder models are made exclusively. The capacity of the Flint factories will be doubled and for 1908 the company will have a new drop forge plant and also one for the manufacture of malleable castings.

**New in Denver**—Eleven cars never before offered to people of Denver have been added to the lists of local agents. They are the Premier, American roadster, Mora tourer and roadster, Temple Marvel, Atlas, Cameron, Gale, St. Louis, Haynes, Pope-Hartford and Colburn—bringing the total number of cars to choose from up to fifty. Two of these, the Fritchle electric and the Colburn gasoline, are built here.

**Denver's Largest Garage**—E. R. Cumbe, agent for the Rambler and Mitchell, now is occupying the largest garage in Denver. It is 50 by 125 feet, ground floor space, with a second story on the rear end 50 by 30 feet, used for a repair shop, to which cars are carried by an elevator operated by electricity. The building is constructed of stone and brick and the roof is supported by heavy steel girders. A hardwood floor is laid off in the front for a

show and waiting room, and the other part of the ground floor is concrete. The building cost \$10,500.

**Whitehead Succeeds Broessel**—W. C. Whitehead has succeeded Herman Broessel as president of the Smith & Mabley Mfg. Co., of New York city.

**New Coast Concern**—The Union Automobile Co., of Bellingham, Wash., has been organized with a capital stock of \$10,000, by H. J. and G. E. Crockett. The company will handle the Cadillac.

**Join Autocar Forces**—John Milliken, lately with the Electric Vehicle Co., is now manager of the New York branch of the Autocar Co. Louis Fitzgerald and J. A. Crittenden, both of whom were formerly with the Electric Vehicle Co., are associated with Mr. Milliken.

**Partners Split**—George Bouton and Dan J. Cambridge, who were partners in the Syracuse Garage Battery Co., of Syracuse, N. Y., have dissolved partnership and will hereafter run separate places. Mr. Bouton has opened a garage for electrics at 118 South State street and Mr. Cambridge will be found at 410 South Warren street. Both will do repair work.

**Rosinos Sell Out**—Rosino brothers, of Bucyrus, O., have sold their garage in that city to Harry Paxton, also of Bucyrus. The deal was consummated last week and the change made this week. George Rosino, one of the brothers, goes to Fostoria, where he is interested in the Fostoria and Auto Machine Co. Volney Rosino, the other brother, will shortly remove to Seattle, Wash., where he will open a garage.

**Adds a Garage**—West Philadelphia is so rapidly outgrowing its garage accommodations that the Williamson Motor Co., manufacturer of motors, marine engines and fittings at 812 South Thirty-ninth street, quietly acquired the next-door property and opened an up-to-date plant for the storage and care of motor cars. At the same time the demand for its marine engines has so greatly increased that an enlargement of the factory has been necessitated and a New York branch has been opened to take care of the export business.

**Costly New Garage**—The plans for the new three-story salesrooms and garage of the Keystone Motor Car Co at 216-18-20 North Broad street, Philadelphia, are now in the hands of the builders, and Manager Wayne Davis hopes to have the new home of the Packard and Buick ready for occupancy by the middle of next July. The first floor will be devoted to salesrooms and offices, with a portion of the garage in the rear. The second floor will be used for garage purposes, while the third floor

will be occupied by a completely-equipped repair shop. The cost will be upward of \$75,000, it is said.

**Name of Kelsey's Company**—The American Cab and Express Co. is the title of the concern C. W. Kelsey, formerly of the Maxwell-Briscoe forces, is organizing to introduce taximeter cab service in New York and other cities.

**Addition to Quaker Row**—The Philadelphia Auto Sales Co., W. H. McLain, manager, has opened offices at 332 North Broad street, Philadelphia, and will represent the products of the Reliance, Jewel and Dolson factories in southeastern Pennsylvania.

**Quits a Bank Job**—Fred L. Townsend, for 18 years one of the tellers in a large bank at Haverhill, has resigned to go into the motor car business in Boston. Mr. Townsend has become affiliated with the George H. Lowe company, the New England agents of the Aerocar, and will act as treasurer of that concern.

**Pennsylvania Tire Recruit**—Since the opening of its Michigan branch at Detroit January 1, under the management of O. H. Joy, the business of the Pennsylvania Rubber Co., a resident salesman has been appointed, in the person of H. Y. McMullen, to attend to the trade in the outside and manufacturing fields.

**Takes in Two Partners**—The O. H. Dietrich Co., of Allentown, Pa., has become the Dietrich Motor Car Co., Valentine Guidin and William T. Leh being admitted to the firm. The capital is \$25,000, fully paid in. The officers are: President, G. J. Heintzleman; secretary and treasurer, O. H. Dietrich; directors, O. H. Dietrich, G. J. Heintzleman, Valentine Guidin, William T. Leh.

**In a Big Place**—The Empire State Motor Co. is now housed in a handsome seven-story and basement garage at 2148-2150 Broadway, New York. Under this title it is the New York agent for the Craig-Toledo and the Queen and as the Empire State garage conducts an extensive storage, repair and fitting business. Herman Raub, a wealthy brewer, is the president of both companies.

**Solves Shipping Problem**—After considerable experimenting, the National Motor Vehicle Co., of Indianapolis, has solved the troublesome problem of shipping motor cars with the least effort. The solution is in the building of an immense concrete platform running the full length of the main factory building. The ground adjoining was excavated and the freight car doors are now on a level with the cement platform. Motor cars are now run from the factory shipping room directly into freight cars. The platform is said to



have cost something like \$1,200, but the company considers it one of the most satisfactory improvements it has made.

**Crouse the Manager**—The Syracuse Automobile Supply Co., of Syracuse, N. Y., of which J. Lansing Crouse is manager, has opened a garage at 118 South Clinton street and will sell the Maxwell. Mr. Crouse formerly was city salesman for the Franklin company.

**Warner Moves**—C. P. Warner & Co., Chicago representatives of the Moline, have moved into the same building at 1502 Michigan avenue with G. E. Holmes & Co. The two concerns have a working interest which, however, does not affect the individual identities of either.

**Moving to Geneva**—The Motor and Manufacturing Works Co., of Ithaca, N. Y., will move its plant from Ithaca to Geneva. The company manufactures models for gasoline engines. The company will have a capital stock of \$40,000 and will employ twenty-five hands.

**Edwards Succeeds Burke**—A. J. H. Edwards, who has been connected with the selling end of the Electric Vehicle Co. for 8 years, has been placed in charge of the company's New York branch, succeeding W. W. Burke, the recently-elected head of the Motor Parts Co., of New York.

**Munger Creditors to Meet**—Creditors of the Munger Vehicle Tire Co., of New York, will meet at 146 Broadway, in the office of Referee in Bankruptcy Seaman Miller, to approve their claims and appoint a trustee for the concern that was declared bankrupt February 27.

**Winton Branches**—Work on the new Winton branch at Pittsburg is progressing so rapidly that the building will undoubtedly be ready for occupancy by April 15. A site for the Winton branch in Detroit will be selected within the next 10 days and the building work then will proceed rapidly.

**Moline Plant Expanding**—The Moline Pump Co., maker of engines at Moline, Ill., is erecting a frame building 60 by 90 feet of saw-tooth construction, to be used for the manufacture of motor cars and gasoline engines. The concern will make the Illinois in two models—both of them runabouts, one of 12 and the other 20 horsepower.

**Kimball Employees Entertained**—C. F. Kimball, president of C. P. Kimball & Co., Chicago, body builders, entertained his 235 employees at luncheon, celebrating the thirtieth anniversary of the founding of the house in Chicago. Mr. Kimball was presented with a handsome piece of bronze, the presentation being made by Foreman W. H. Little, of the trimming shop, who not only has been in his present position for the past 30 years, but also saw 8 years of service with the parent house in Portland, Me. In acknowledging his thanks Mr. Kimball commented on the fact that twenty-six of his employees had been with

him since the first days of the opening of the house in Chicago, while more than a quarter of the entire number had been in his employ for more than 15 years.

**Will Handle French Tire**—William Sanford, Jr., & Co., 903 North Broad street, Philadelphia, have secured the selling rights in that city and adjacent territory for the tires made by Torrillon & Co., Clermont-Ferrand, France.

**Open Chicago Branch**—The Pierce-Racine people have opened a branch in Chicago at 1421 Michigan avenue, which is in charge of S. E. Wheritt, formerly with Carson, Pirie, Scott & Co. The branch will handle motor boats as well as motor cars, it is announced.

**Tire Concern in Denver**—John McMillan and Charles G. Fawkes are reported to be forming a \$250,000 company in Denver for the purpose of manufacturing the Fawkes tire, it being asserted the Colorado air is so dry it makes it possible to manufacture tires to better advantage than in the east.

**Gearless in Chicago**—The Illinois Motor Car Co., of which John M. Larsen, president of the Larsen Ice Machine Co., is the chief executive, has become the Chicago distributor for the Gearless Transmission Co., and will handle Gearless cars in the Windy city. The Illinois company has temporary offices at 1011 Manhattan building and April 10 will open up on the row.

**New Wheel Tried**—The Rutherford pneumatic wheel, which does away with rubber tires, was given a test in New York on Saturday on a big rubber-neck car. The result was pronounced highly satisfactory to the financiers participating. These Rutherford wheels are fitted with wooden tires, the vibration being taken up by a pneumatic tube placed midway between the hubs and rims.

**Diamond Branch in Pittsburg**—For the convenience of the trade in Pittsburg and vicinity the Diamond Rubber Co. has established a general agency for its tire and accessories at 16 Wood street, Pittsburg. This new tire establishment occupies a part of the quarters of the Pittsburg Rubber and Leather Co., which concern has for many years been the agent for Diamond mechanical rubber goods in that territory. A complete stock of tires of all types and sizes will be carried.

**Chedru With Thomas**—Gustave Chedru is the head of the foreign designing corps of the E. R. Thomas Motor Co. Prior to his connection with the American firm M. Chedru was technical director and consulting engineer for the Societe des Automobiles Thery. He began his designing career 18 years ago with the Continental Edison Co., later becoming designer for the Compagnie Electrique Thery. His gasoline motor designing experience is a matter of 14 years and during that time he has been designer for the De Dion-Bouton firm and chief engineer and superintendent for both the Richard-Brasier and Clement-

Bayard companies. He has the unique distinction of having designed the cars which won not only the French eliminating trials for the Bennett cup race but the Bennett race as well both in 1904 and 1905.

**New Factory Possible**—The Syracuse Aluminum and Bronze Co., manufacturer of motor parts, has under consideration the erection of a new factory building in Syracuse, N. Y.

**Bremer with Dolson**—F. G. Bremer, formerly with the Pope people at Toledo, has become assistant general superintendent of the factory of the Dolson Automobile Co., at Charlotte, Mich.

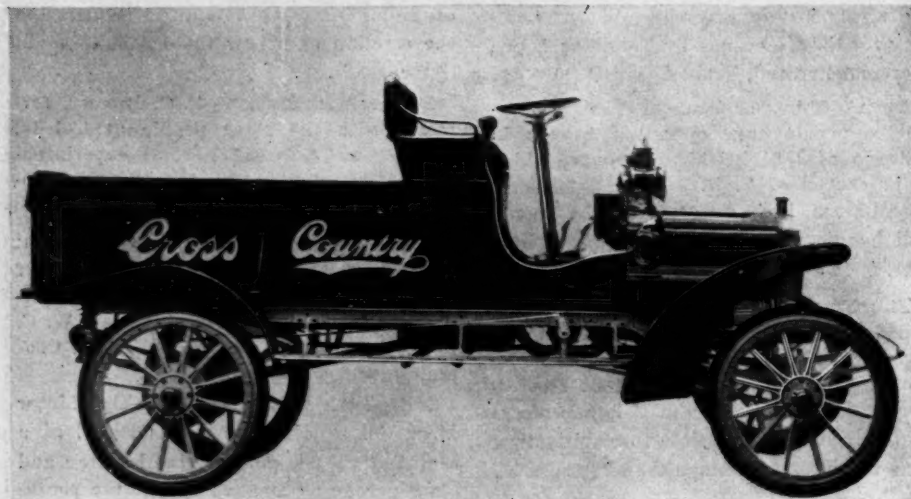
**Brown-Lipe Election**—At the annual meeting of the Brown-Lipe Gear Co., of Syracuse, the following officers were elected: Alexander T. Brown, president; W. C. Lipe, vice president, and H. Winfield Chapin, secretary and treasurer.

**New York's Motor Mart**—The Motor Mart Co., of New York, has leased at a rental of \$35,000 per year the big iron and glass garage so long vacant at the southeast corner of Broadway and Sixty-second street and will subdivide it into salesrooms and offices. Among the lessees already are the Diamond Rubber Co., the Mitchell Motor Car Co. and the General Vehicle Co. The building has 110,000 square feet of floor space. An L is to be built to Sixty-first street. It is said that \$50,000 will be spent in alterations.

**Brooklyn Dealers Organize**—The Long Island Motor Trade Association has been formally organized in Brooklyn. The officers elected are: Edward H. Barnum, president; Lewis H. Allen, vice-president; D. D. Martin, secretary; B. D. Underhill, treasurer; board of directors, Edward H. Barnum, Lewis H. Allen, D. D. Martin, B. D. Underhill, Captain D. W. Pratt, Louis Kelso, W. A. Blanchard, M. J. Wolfe, J. H. Vanderveer, C. W. Morris and C. A. Carlson. The association starts with a membership of fifty-five.

**Rainier Plant at Saginaw**—President Rainier, of the motor car company bearing his name, says that the new plant for the manufacture of Rainier cars at Saginaw, Mich., will be ready for the workmen to take possession within a month, that 400 cars will be next year's output, and that the first of the 1908 product will be on the market by October next. All the buildings are of brick and one story. The main building, 240 by 140 feet, has a monitor roof. The other buildings are a factory, 160 by 90; a power-house, 60 by 60, and an office building, a body shop, a brass foundry and a drop forge plant are to be added. A temporary plant is in operation at Detroit. The capital of the company has been increased to \$1,000,000. James G. Hanslett, who has designed the Rainier cars for the past 3 years, has been appointed chief engineer, designer and factory manager. The executive officers will remain in New York with Paul N. Linberger as vice-president and manager.

## The REALM of the COMMERCIAL CAR



NORTHERN 1200-POUND COMMERCIAL WAGON

**W**ITH the passing of the motor show season comes the awakening in the realm of the commercial car that many makers looked for. After the close of the spring shows a year ago many prospective buyers held aloof until several of the new machines then exhibited had proven their worth. In many cases these machines were not what they purported to be and since then have gone through a perpetual metamorphosis and are now approaching a serviceable standard. The public doubted the feasibility of the commercial car for some time, but the present spring is witnessing a return of faith and many makers are reporting growing demands for cars from all parts of the country. The season has seen not a few firms engaged solely, or partly, in the manufacture of commercial cars drop from the zone of activities. In three or four cases bankruptcy has been the course pursued and with others the commercial car has been quietly dropped. The last year has done one thing and done that well—it has taught the manufacturers that to have a successful commercial car more has to be done than the gearing of a pleasure gear for slower speeds and adding solid tires. Makers sooner or later had to learn this. A few learned it by experience not too costly, but many sacrificed their plants in obtaining the information. It is a healthy sign of the present season that wildfire reports of immense factory outputs are not heard and the makers are going slow but sure, contenting themselves with a few cars and making them well. Still another healthy sign is that of testing out the cars well before placing them on the market. In the days when a company announced its intention of bringing out a commercial machine and placing it

on the market the next week many heart-breakings occurred a few weeks or months after the machine had been at work. Then the shortcomings appeared, then the weak spots became apparent and then it was up to the maker to withdraw the machines or spend a neat fortune in keeping them in repair. The present tendency shows that makers now build one or two trucks and keep them in service for a year or 2 years before even beginning their manufacture in numbers. Then when the truck is placed on the market it is a tried and proven quantity. This conservatism of makers is inspiring a confidence in the buyers, who now feel at least that when they buy they are investing in no utopian engineering conception but in a business wagon, one that can go the distance, carry the loads

and withstand the strains. The number of new makers is scarcely as large as the number of those who are pondering over their past ways, but what matter, it is quality and not quantity the country wants. Not alone are the present wagons more durable but wonderfully better designed. Several of the makers who devoted all of their attention to business wagons frequently gave little heed to the progress evidenced in pleasure cars. Now the commercial machine incorporates the latest and best that is brought out and its workmanship is among the finest in spite of the larger parts that are needed. Those makers who feel that it is "better to have built and failed than never to have built at all" may be looked for to resurrect within the next twelvemonth and it is a safe assertion to make that their designs will show the benefit of dear-bought experience and their future plans of manufacture will be of a reformed nature.

### NORTHERN COMMERCIAL CAR

Detroit is the home of one more commercial machine, the Northern, built by the Northern Motor Car Co., which concern is known throughout the country by its pleasure cars. It is not the intention of the company to set aside a separate department for commercial car construction—its business wagons are but pleasure chassis fitted with a body suitable to the whims of the purchaser. The car illustrated herewith is in service in a country club and has a low side body well adapted for light loads up to 1,200 pounds, the capacity of the machine. The chassis in this wagon is the same as that used in the model G touring car. The motor, rated at 20 horsepower, has  $5\frac{1}{4}$  by  $5\frac{1}{4}$ -inch cylinders, opposed and placed transversely under the hood. The crankshaft speed is 900 revolutions per minute. Speed variations are made through a planetary set giving direct drive on the top speed. Connection



AUTO-CAR EQUIPMENT CO.'S PIANO MOVING WAGON

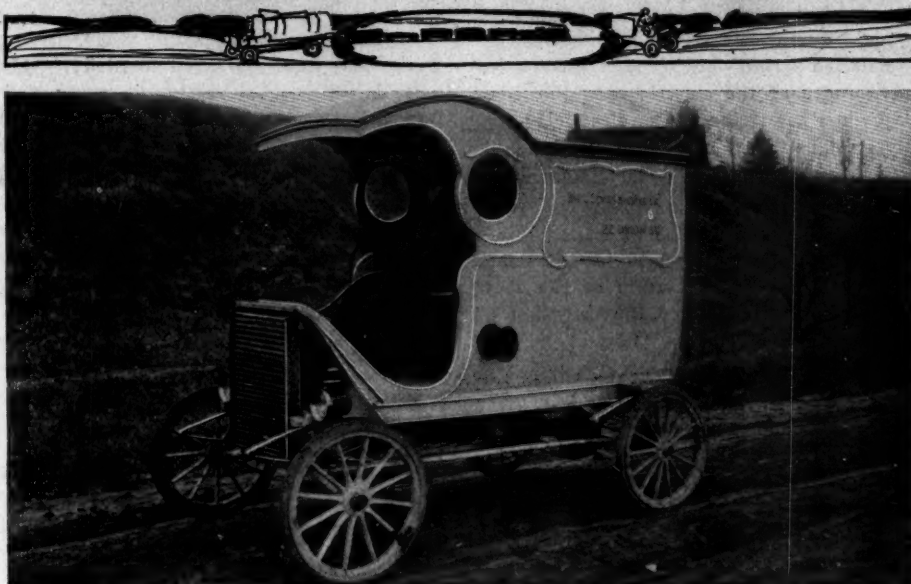


to the back axle is through cardan shaft. As in all of its pleasure cars the angle steel frame is in use and points noted in the chassis are: Full ellipsics in rear and semi-ellipsics in front, frame dropped in front to carry motor, inclined steering column with control members and other points as used on the G touring car. Either solid or pneumatic tires are provided.

### MOTOR BUSES CONQUER SNOW

The oldest inhabitants of Berlin do not remember having seen such a hard winter as the present one in Germany and the difficulties which the traffic in the streets has met with show that nobody seems to believe any longer in a real winter. Sleighs do not now exist and the lads scarcely dare to throw a few snow balls. The large quantity of snow which fell during the night of January 30-31 upset everything in town. The first vehicles which surrendered to the snow were the street railways. The elevated railway was only got into more or less regular working order after many hours' delay. Cabs and buses gave the horses a great deal of work to pull them painfully through the snow and it was pitiable to see the poor horses trying to pull heavy commercial wagons. Light commercial rigs got along where the road was flat, but the least grade obliged them to stop. Five thousand snow sweepers were put at work at 5 o'clock in the morning, but the snow fell so fast that all their work was useless. While in all streets the same scenes of panting horses and raging coachmen could be witnessed, motor cars were circulating without the least trouble. The best work was done by the motor buses. They started service at the regular hour in the morning and ran all day as if no snow ever had fallen, and they were the only means of transportation which could be had in the city. Motor cabs and private motor cars and also motor commercial vehicles did

## RENEWED ENERGY APPARENT



PIONEER WHITE STEAM DELIVERY WAGON

their service quite as brilliantly and they did not fail in this exceptional situation to travel at the highest speeds. They all seemed to be so satisfied with their superiority that it caused many of them a lot of trouble not to exceed admitted speeds. January 31 was a red-letter day for motor cars in Berlin, and certainly many of those who usually rage against them were obliged to admit that after all they are a great deal superior to horse traction.

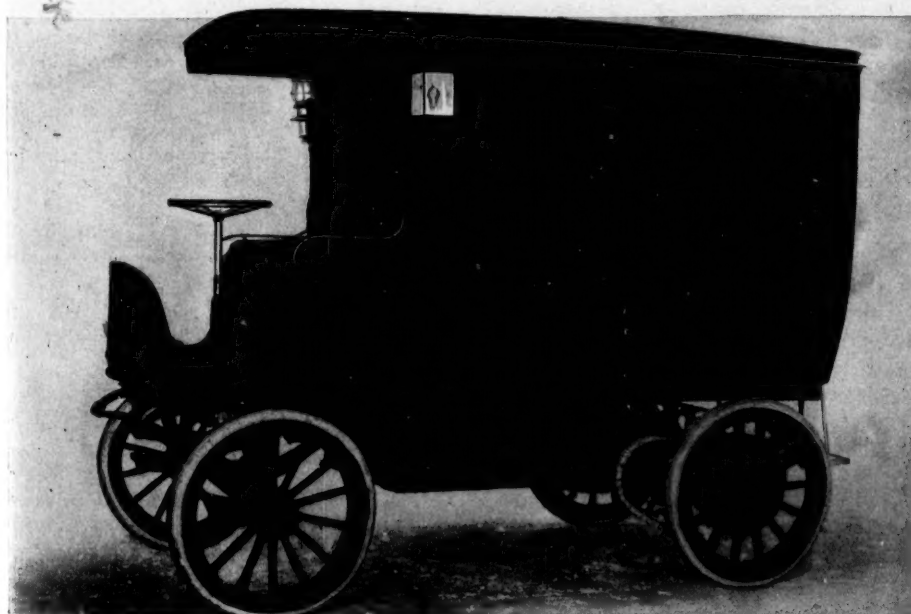
### ELECTRIC POLICE PATROL

In the future violators of the established law of the city of Oakland, Cal., will be driven to the seat of justice in a motor vehicle, namely, a Columbia electric police patrol. In appearance the vehicle is striking, the color scheme being unusual

for a vehicle of this sort. Usually a patrol wagon boasts of no color scheme other than a dead black, generally in conformity with the spirits of the occupants, but not so with the Oakland vehicle. The running gear is a dark red while the body is dark blue, the combination being harmonious. The chassis is of the regulation 2,000-pound Columbia type with a forty-two-cell Exide battery, underslung. The power plant consists of two General Electric motors. Drive is effected through double side chains and thirty-one-tooth sprockets geared to the countershaft. The controller is horizontal and is readily accessible by the operator. The wheels are 36 inches in diameter and are fitted with 3½-inch Turner rubber tires. The sides of the wagon are solid wood panels reinforced on the inside by wire screens of heavy gauge. A small window 10 by 12 inches is provided back of the driver's seat and is opened from the outside only and drops into a well when not in use.

### HISTORIC STEAM DELIVERY

In the New York and Boston reliability run of the Automobile Club of America in the autumn of 1902, two delivery wagons made the entire run from New York to Boston and return and finished by securing "perfect scores." Both qualified for the President's cup. They were two White wagons and were the only commercial vehicles in the run. The two wagons were also the first delivery wagons to take part in any public tour or contest in the United States. The two were of identical construction and were built by the White Co., then the White Sewing Machine Co., for the use of the company in Cleveland. The two still are in use and are as reliable in their operation and record nowadays as they were in 1902.



OAKLAND'S ELECTRIC POLICE PATROL WAGON



## FROM THE FOUR WINDS



**Felt the Strike**—Paris found out the disadvantages of the electric cabs the other day when the strike of the electricity supply stations put them all out of service as well as numerous private electric carriages.

**French Show in November**—The Paris salon for 1907, the tenth of its kind, will last 3 weeks, starting late in November this year. The organization of the show already is started under the direction of M. Rives.

**Car on Royalty's Yacht**—King Edward's new turbine yacht, named after Queen Alexandra, has been provided with facilities for the prompt shipment and debarkation of the motor car of England's king. The royal voyagers will take it with them and use it for shore duty in places where motor cars are few in number and not of royal caliber.

**Oriole Directors**—At the meeting of the Automobile Club of Maryland last Wednesday evening the following board of directors was elected: F. W. Darling, C. Warren Stork, M. S. Hess, O. I. Yellott, H. M. Rowe, R. G. Dulany and J. S. Reese. After the regular business of the club a handsome pair of andirons was presented to the club by J. S. Detrick. The design showed a motor car climbing the Washington monument.

**Danger Signals in Germany**—Germany is introducing throughout the fatherland seven international danger signals which consist of tin plates erected 500 meters from the dangerous points, as follows: One, dangerous turn to the left; two, dangerous turn to the right; three, water channel, gutter or gully, hollow; four, knoll or elevation; five, cross roads; six, railway crossing; seven, double curve. The signs are the same as those in use in France, Belgium and Italy, and Germany is adopting them through the efforts of the Imperial Automobile Club.

**Szisz Will Drive**—George C. Tyler, who left last Tuesday for Europe on the Kaiser Wilhelm II, has in preparation one of the most interesting and novel trips yet made in Europe. He has just had built for him by Renault Brothers, of Paris, the fastest touring car the firm has yet turned out. It is of the standard four-cylinder pattern of 90 horsepower and is guaranteed to do 118 miles per hour under the best conditions. Mr. Tyler will be met at Cherbourg by a party of friends including Booth Tarkington, the author, and Harry L. Wilson, the author of the play, "The Spenders." Szisz will be at the wheel of the new car. On his arrival in Paris Mr. Tyler and his party will start east at once and will go straight through to Constantinople. On his return he intends to visit Bucharest, Budapest and the Austrian

Tyrol, and then run down to Sicily. He will travel through Italy, Germany and Denmark and will run up to Norway. On his return he will travel down through the south of France.

**New English Test**—The Automobile Club of Great Britain and Ireland will hold a contest March 23 between four and six-cylinder cars to determine which type does best on the top speed gear, running both fast and slow. S. F. Edge has entered a Napier six.

**Nineteen in Gold Cup Tour**—Recent nominations to the American gold cup tour bring the total number up to nineteen, a 40-horsepower Wayne, a 24-horsepower Dragon and a 45-horsepower Pierce having been entered last week. Georges Dupuy now counts on thirty entries for his contest through Europe.

**Pittsburg's Latest Idea**—The Liberty Automobile Co., of Pittsburg, will start its Wayne car on a none-engine stop 1,000-mile run April 4 and expects to have the car back at Duquesne garden the first week of the show. It is a 35-horsepower car. Local merchants have contributed several thousand dollars' worth of goods to be given away from the car along its route, and a guessing contest will be held by one big downtown firm to determine how far the car goes every 6 hours.

**Hoosiers in a Non-Stopper**—An effort to break the world's non-engine stop record is being made in Indianapolis by the Capital Automobile Co., Indiana agent for the Wayne. The run is the first of its kind ever run in the state. The car started shortly after noon last Friday, and, while the goal has been set at 3,000 miles, it is understood it is to be continued to 10,000 miles if the motor is capable of such a performance. The run is one of the principal attractions of the Capital Automobile Co. for show week, which began Monday.

**Grand Rapids Plans**—The Grand Rapids Automobile club is planning great things for the season which will open early in April, and the annual meeting, at which it is expected committees will be appointed and plans laid for a campaign along the line of good roads and law enforcement made, is but a few days away. A committee will be selected to push along the good roads work. For the enforcement of the law another committee will be chosen and all measures will be enforced to the letter, for it is the purpose of the club members to bring the public to their way of thinking and to disabuse the mind of the latter of the idea that motoring is a lawless and dangerous sport. The use of bright headlights in the city will be discouraged. Excessive tooting of

horns and the emission of a large quantity of odoriferous smoke from the muffler will also be decried. It also is planned to have a tour similar to the Glidden, but the route has not yet been selected.

**Elliott Goes West**—With the idea in view of assisting in the organization of the state associations Frederick H. Elliott, secretary of the A. A. A., started on a tour of the middle west Monday. Mr. Elliott will make the states of Michigan, Wisconsin, Indiana, Missouri and Kentucky. His first visit will be in Milwaukee. From there he will go to Indianapolis.

**Baltimore Convert**—One of the handsomest and most spacious private garages in the south will be built by General Alfred E. Booth, of Baltimore, in the rear of his residence on Eutaw place. General Booth is the latest convert to the motor car. He was one of the most prominent horsemen in the country, but he has sold all of his stock to make way for his motors.

**Emperor's Cup Details**—It has been decided that the racing cars in the Emperor's cup race in Germany will be distinguished as follows: English cars, green; Belgium, yellow; Germany, white; France, blue; Italy, red; Austria, black and yellow; Switzerland, red and yellow. The Durkopp car will be first to start and there are five German cars in the first seven. This was settled by drawing lots.

**Municipal Garage for Chicago**—Alderman P. J. O'Connell is the advocate of a plan to erect a municipal garage in Chicago, having submitted his scheme to the council finance committee. He proposes that all cars, except those belonging to the fire and police chiefs, be kept in the garage and sent out on call from any city department head. When a machine goes out the time will be registered and also the use for which it is taken. The time of return also will be checked.

**Space at Jamestown**—The palace of machinery and transportation, one of the largest buildings of the Jamestown exposition, containing 350,000 square feet of exhibit space, will house the greater part of the transportation display to be made at the exposition, which opens on April 26. This building, in a central part of the grounds, overlooking the waters of Hampton Roads, is of permanent brick and concrete construction, and is considered one of the most attractive structures of the ter-centennial. In an official statement the exposition officials say: "Owing to the fact that the government is considering the advisability of holding official speed and endurance tests at the exposition for motor cars, in connection with the war department and postoffice department services, great interest is being



manifested by manufacturers of such vehicles in every part of the country, and it is expected that a very complete exhibit along these lines will be displayed at the exposition."

**No Beach Races This Spring**—The spring beach races of the Atlantic City Automobile Club will be omitted this year, although the strand is in excellent condition. The club prefers to save its energy and its funds for the fall meet, which, as usual, will be held during the first week of September.

**Interesting News**—Philadelphia motorists are intensely interested in an ordinance which will be introduced in city councils early next month asking the city to purchase the plot of ground bounded by Green, Fairmount avenue, Twenty-fourth and Twenty-fifth streets and to erect thereon a mammoth auditorium building for conventions, expositions and shows. This site, which is directly on the new Parkway and just across the street from Fairmount park, will accommodate a building considerably larger than Madison Square garden. Common Councilman Henry W. Lambirth is introducing the ordinance and working for it.

**Cannot Use City Line Road**—The contest committee of the Quaker City Motor Club struck a snag last week when at a meeting of the Fairmount Park commission a number of protests were filed against granting the use of City Line road for the club's hill-climb on Memorial day. Grand Army posts and the managers of two cemeteries which can only be reached via City Line road were among the remonstrants. As no less than four possible courses were under consideration by the contest committee, the refusal to grant the use of City Line road will not disarrange its plans to any considerable extent. The next choice for the climb, it is understood, is Chestnut Hill.

**New Jersey's Roads**—According to figures compiled by the federal office of public roads, New Jersey, in 1904, had 14,842 miles of public road. Of this mileage, 481 miles were surfaced with gravel, 1,901 miles with stone and 40 miles with shells, making in all 2,422 miles of improved road. The figures show that 16 per cent of the roads of that state have been improved. By comparing the total road mileage with the area of the state it appears there was 1.97 mile of road per square mile of area. A comparison of mileage with population shows that there was 1 mile of road to over 127 inhabitants and 1 mile of improved road to every 777 inhabitants. The state appropriates about \$250,000 annually to aid the counties and townships in the permanent improvements of roads constructed under the direction and according to the specifications and plans of the state highway commissioner. The state pays 33 1-3 per cent of the cost of these roads, the counties in which the roads are built 56 2-3 per cent, and the

townships 10 per cent, so for every \$250,000 appropriated by the state for permanent roads the counties and townships appropriate and expend on the same roads \$500,000.

**Will Elect State Officers**—The annual meeting of directors of the New York State Automobile Association will be held at Auburn, N. Y. It is probable the present officers will be re-elected, as follows: O. A. Quayle, Albany, president; H. S. Woodworth, Rochester, vice president; C. D. Hakes, Albany, secretary; N. M. Pierce, Binghamton, treasurer. Directors will be elected on a new basis of representation.

**Canadians Forming a League**—At a recent meeting of the Toronto Automobile Club it was decided to discontinue the corporate existence of the organization and to form a new provincial association to which every motorist in the province of Ontario will be eligible for membership. The new organization will be known as the Ontario Motor League, and one of its principal objects will be to carry on a good roads movement somewhat similar to those promoted by motorists all over the United States.

**Big Orphans' Day Planned**—The three clubs of Philadelphia are preparing for a monster Orphans' day outing, to be pulled off some day during the latter part of May. Although the plans have not yet been definitely decided upon, it is understood that the objective point of the run will be Willow Grove, and that the Rapid Transit Co. will cooperate with the motorists by throwing open the manifold attractions of that famous resort free of charge to all the little ones. Over fifty cars already have been promised by members of the Quaker City Motor Club alone, and the Philadelphia and Germantown clubs will furnish an equal number. The committee hopes to secure transportation for at least 500 children on the red-letter day.

**New Racing Board Appointments**—Following the line of policy adopted in his appointment of other A. A. A. standing committees President Hotchkiss has announced the following additions to the racing board: E. H. R. Green, Dallas, Tex.; Asa Paine, Daytona, Fla.; F. R. Pratt, Newark, N. J.; W. S. Belding, Baltimore, Md.; A. B. Lambert, St. Louis, Mo.; Ira M. Cobe, Chicago; Albert Mackie, New Orleans, La.; W. E. Edge, Atlantic City, N. J.; L. A. Wood, St. Paul, Minn.; Harry Knight, Boston, Mass.; S. K. Martin, Jr., Chicago; Edward J. Wiedecken, Milwaukee, Wis.; F. L. Bartlett, Denver, Colo.; H. L. Bowden, Boston, Mass.; Charles J. Swain, Philadelphia, Pa.; Philip S. Flinn, Pittsburgh, Pa. The appointments hitherto made were: J. DeMont Thompson, New York, chairman; W. K. Vanderbilt, Jr., New York; R. L. Lippitt, Providence, R. I.; A. G. Batchelder, New York; Frank G. Webb, Brooklyn; E. Russell Thomas, New York; A. R. Pardington, Brooklyn; George L. Weiss, Cleveland, O.; S. M. Butler, New

York; Frederick H. Elliott, New York, secretary. The technical advisers to the board are: A. L. Riker, Bridgeport, Conn.; Henry Ford, Detroit; E. R. Thomas, Buffalo, and J. J. Mann, Paris, France.

**Johnson Will Referee**—E. C. Johnson will referee the 2-day endurance run of York, Dauphin, Perry, Cumberland and Lebanon county motorists which will start from Harrisburg, Pa., on May 7. The itinerary includes Lebanon, Lancaster and York for the first day, stopping overnight at the latter place, and Hanover, Gettysburg, Chambersburg and Carlisle on the second day, finishing at Harrisburg. The course, which is a rough parallelogram in shape, is about 175 miles in length.

**Michigan Improvement**—Work has been started on a stone road from Ludington, Mich., to Hamlin lake. The road will be 3½ miles long and will take in some of the prettiest scenery to be found among the Michigan summer resorts. The route selected will cross Lincoln lake near Epworth Heights and will then proceed directly north to the Gathe resort at Hamlin lake. At the point where the road crosses Lincoln lake the lake is about 775 feet across, but the lake will be filled in from each side with sand as far as possible and a bridge of perhaps a 200-foot span will complete the crossing.

**New Kind of Stunt**—J. L. B. Wilhide, of Baltimore, won a wager with a 40-horsepower Aerocar by making a trip from Baltimore to Frederick and return in 3 hours each way. The distance one way is 45 miles. A condition of the bet was that no tool or instrument other than the regular fixtures of the car was to be used. The only application to the machine was an oiling allowed at one stage only of the round trip. The road nearly the entire way was in bad shape, but the car overcame all difficulties. The car weighed 2,500 pounds when it started, while the passengers weighed 750 pounds. Fully 100 pounds of mud were accumulated by the car and passengers by the time the trip was ended.

**Spain's Show**—An international motor car exposition is to be held in Madrid, Spain, next May. The government at Washington has been advised that this will be an excellent opportunity for American manufacturers to exhibit their products. The fact is set forth, however, that it will not be worth while to show single-cylinder cars, as there is a pronounced prejudice in Spain against them. This same prejudice even applies to two-cylinder cars, and as a matter of fact there is no demand in Spain for other than four-cylinder cars. Manufacturers who can offer a good car of from 16 to 20 horsepower, at prices ranging from \$1,500 to \$1,800, would probably find a prompt market for them in King Alfonso's land, the report says. Motor cars intended solely for display at the exposition will be admitted into Spain free of customs duties.



# LEGAL LIGHTS AND SIDE LIGHTS



## MILD IN WISCONSIN

Wisconsin motorists believe they have the best motor law of any state in the union, but they also think it could be strengthened, so the Milwaukee Automobile Club would provide a jail sentence or a heavy fine for reckless drivers by adding the following:

No person shall operate a motor car or other motor vehicle upon or along any public highway in this state at a rate of speed greater than is reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life or limb of any person or the safety of any property.

Any person who shall operate a motor car or other motor vehicle along or upon any public highway of this state in a culpably negligent or reckless manner, having regard to the traffic and use of the highway, or in any manner so as to endanger the life or limb of any person or the safety of any property, shall be punished by a fine not exceeding \$50 for the first offense; provided that in case of a second conviction of the same person for the violation of the provisions of this section the punishment shall be by a fine not exceeding \$100, or by imprisonment for a term of not more than 10 days; provided further, that in case of a third and subsequent conviction of the same person for the violation of the provisions of this section the punishment shall be by a fine not exceeding \$250, or by imprisonment for a term of not more than 60 days.

With this addition to the present law no further legislation is necessary, as this of itself will be sufficient to curb the most reckless. The maximum sentence of 60 days in jail for persistent violators may seem inadequate to some, but it must be understood that owners of cars are not usually the class known as frequent jail inmates. A day's confinement in prison for the average owner is as salutary for him as would be a 2-year sentence for a confirmed criminal. The attitude of club members toward habitual violators of the speed law is shown in this resolution which the members adopted:

Resolved, That the Milwaukee Automobile Club create and maintain a special fund for the purpose of protecting farmers and persons driving in the country from reckless driving of motor cars; that any person having a grievance against any reckless driver of a motor car be requested to promptly report it to James T. Drought, secretary of the Milwaukee Automobile Club, stating the number of the motor car and the place, time and date of the alleged offense; that a prompt and thorough investigation will be made of all complaints and any person guilty of negligence will be proceeded against according to law at the expense of the club; that the secretary keep on file the name and address and number of every motor car owner in the state of Wisconsin.

## INDIANA LEGISLATION

Despite the efforts of some few rural members of the Indiana legislature, motor-ing will still be permitted in Indiana during the ensuing 2 years. Three new laws are the sum total of the motor legislation at the session just closed, and two of these have no direct bearing on regulating motor car driving. The one act that seeks to strengthen the law passed in 1905 was that fathered by Representative Frump, and was passed only after a bitter fight, as a promise had been given the motoring interests that the law would not be altered at this session. Frump's measure, how-

ever, was considerably toned down before it was sent to Governor Hanly for his signature. About the only important change in the law is that changing the size of state registration numbers from 4 to 5 inches and compelling them to be carried on both front and rear. This will represent an outlay on the start of about \$25,000 for Indiana drivers and owners, as all numbers will have to be changed. The figures must be white on a black background. Another feature provides that motor cars must be under control on approaching dangerous places, such as bridges, dams, intersecting highways and curves. Cars also must be operated at a speed of not more than 6 miles an hour in passing horses or other animals on the road. The penalties are changed, providing fines not exceeding \$50, \$100 and \$200 for the first, second, third and subsequent offenses. The old law provided a fine not exceeding \$50 for each offense. The law will go into effect with the publication of the acts next month. Representative Homan's bill giving motor car concrete railways equal privileges in the matter of subsidies and franchises with steam and electric railroads also passed. A company of capitalists expect to build such a road.

## NOT WHAT WAS WANTED

Before adjourning the Missouri legislature passed a revised version of the bill proposed by the St. Louis Automobile Club. While the bill limits the speed of motors to 10 miles an hour in the cities, and 15 miles an hour on the country roads, it contains the provision for a state license, good in every county, to be issued by the secretary of state upon the payment of a fee of \$5. The original bill prepared by the club, and supported by every motor organization in the state, called for a speed of 15 miles an hour in the cities and 25 miles an hour in the country. Some of the country members, especially those from St. Louis county, fought the bill strenuously, and succeeded in amending it until it is little more than a makeshift for the original measure. Under the old law motors were permitted to run at a speed of only 9 miles an hour, but the law was not generally enforced throughout the state. The Automobile Club of St. Louis will immediately prepare and have introduced into the municipal assembly a bill permitting motors to be operated at 10 miles an hour, the maximum speed allowed by the state law. The 8-mile-an-hour ordinance still is being rigidly enforced by the board of police commissioners, and while the proposed ordinance will not offer much relief, the motorists are thankful for small favors. The state clubs will begin work immediately to obtain more favorable conces-

sions from the legislature, which will convene 2 years hence. By that time a state organization, soon to be formed, will be in full swing, and its legislative committee will undertake to have a bill similar to the one prepared by the Automobile Club of St. Louis enacted into a law. It is thought that within another 2 years much of the prejudice that now exists in the rural districts against automobiling will have died out. Under the new law visiting motorists who have paid licenses in their own states, may operate their machines in Missouri for a period of 20 days without taking out a license. This in itself is considered somewhat of a victory.

## MUST USE CAUTION

Discussing the degree of care required in operating a motor car the superior court of Delaware holds that one operating a motor car has the same right as one operating any other vehicle to use the streets of a city, and must exercise reasonable care and caution for the safety of others, and in an action by one who was run over by a motor car the jury may consider the speed, size, appearance, manner of movement, and the amount of noise made by the machine in determining the degree of care that the operator should have used. The case also holds that the relation of master and servant exists between a driver and his employer, and rules of law applicable to that relation apply. Another point decided is that where one who is injured by being run over by a motor car in the streets of a city saw it before it struck him, or by reasonable use of his senses could have seen it in time to avoid the injury, he cannot recover.

## ILLINOIS HAS HOPES

Only four dissenting votes were cast against the Illinois motor bill when it came up before the senate last week. The vote was 31 to 4. The bill now goes to the house for action. Section 10, dealing with speed regulations, provides for a speed of 1 mile in 10 minutes when turning a street corner; 1 mile in 4 minutes where any street, road or highway passes through a residence district of any town, city or village, and a speed of 1 mile in 6 minutes where a street or highway passes through closely built-up business portions of any town, city or village. Elsewhere the speed is limited to 1 mile in 3 minutes. Racing on public highways is prohibited under a penalty of a \$50 fine. Other penalties for violations of the speed limit run from a fine of \$10 to \$25. Under a clause in the bill city authorities have no right to fix speed limitations, but park boards may exercise this privilege on the boulevards and parks under their control.